Backwoods

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PRACTICAL ADVICE FOR THE SIMPLE LIFE

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PRODUCT REVIEWS

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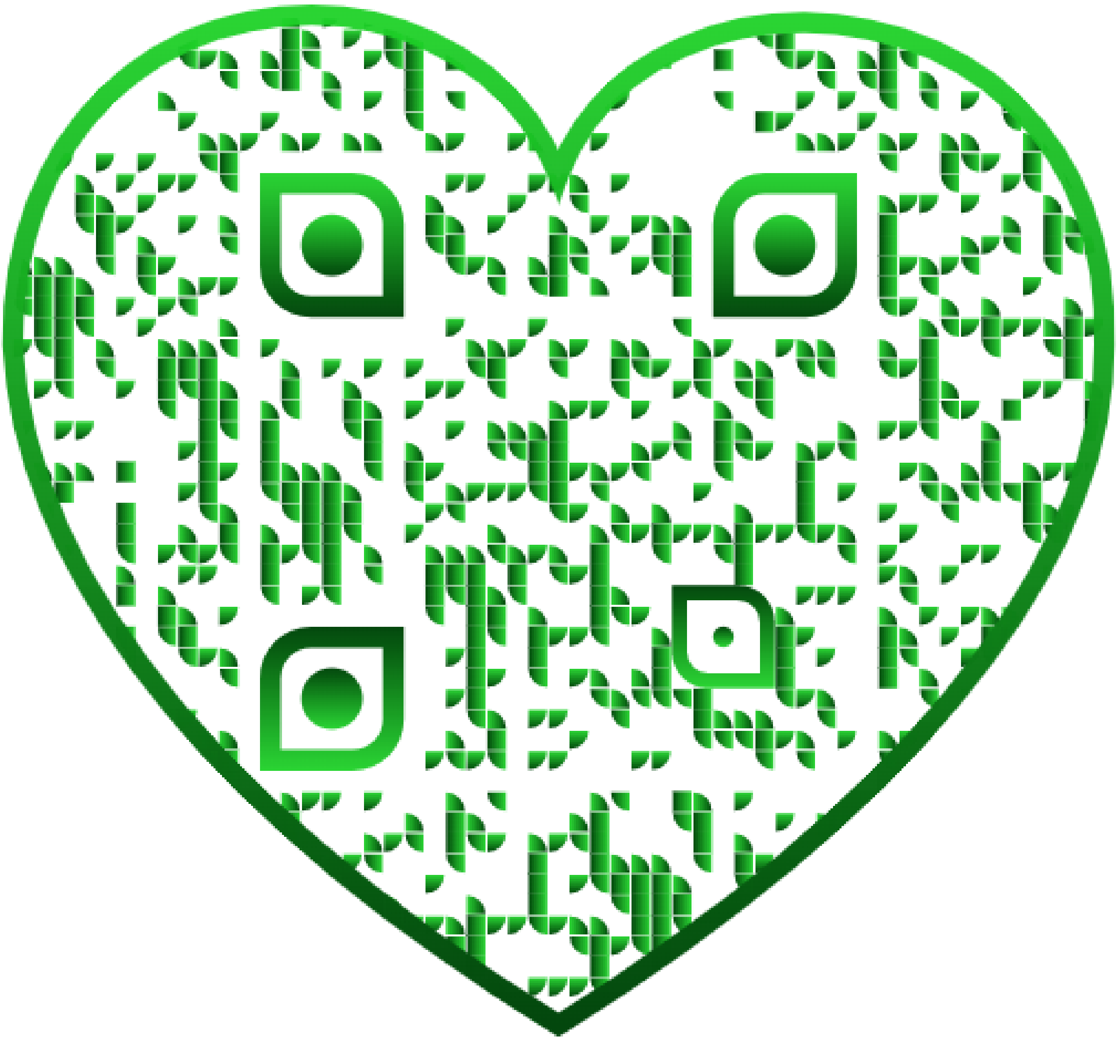

Backwoods Survival Guide®

PRACTICAL ADVICE FOR THE SIMPLE LIFE

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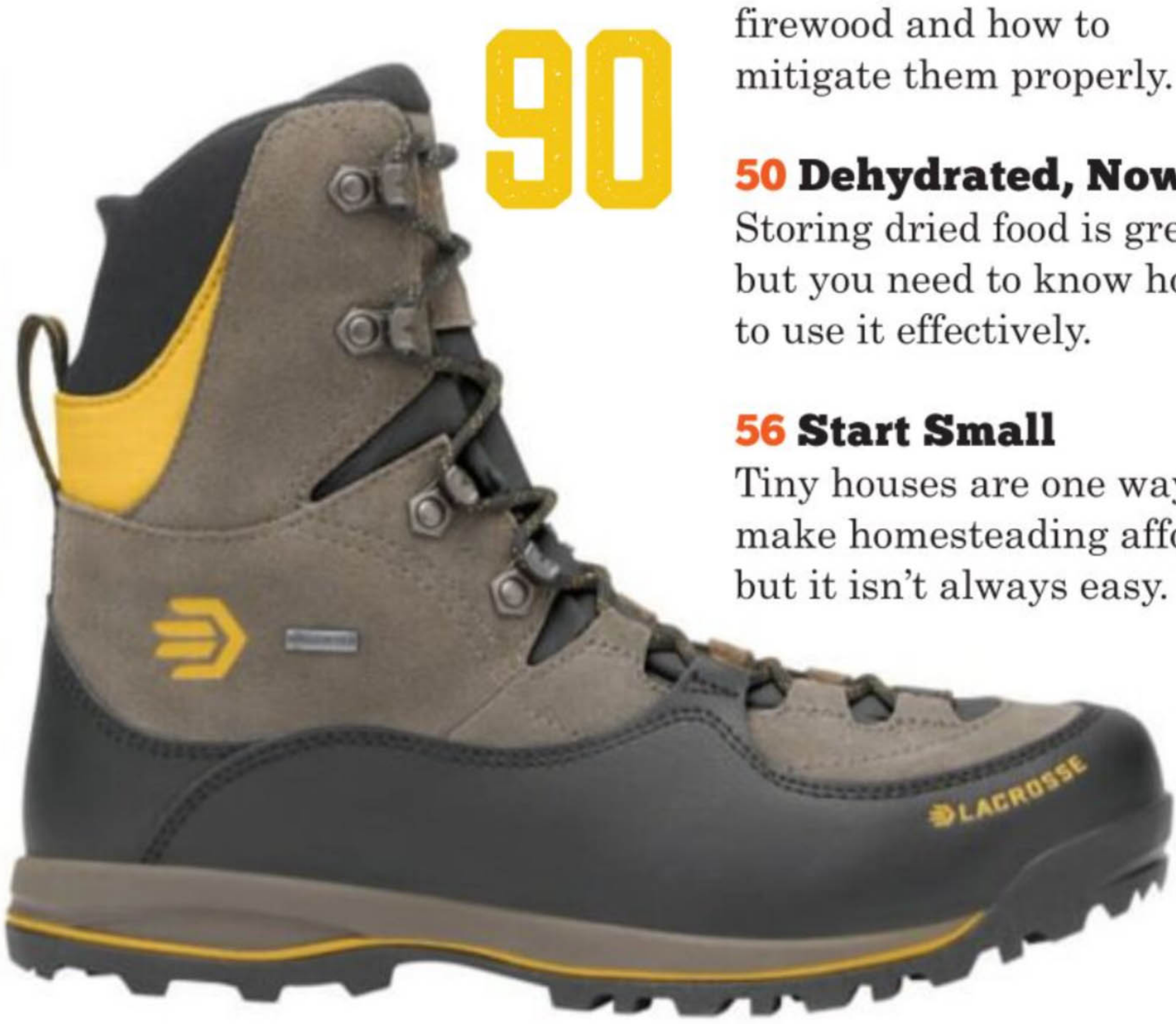

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For submission information or other editorial queries, please email Jim Cobb at jim@survivalweekly.com. We're always looking for new products to feature in our magazines.

Letter From the Editor

Welcome to *Backwoods Survival Guide 35*! Summer is wrapping up and fall will be here before we know it. I have to say that I'm looking forward to the cooler weather. One of the best things about fall camping is cooking and eating outdoors, and our Gear Guide that starts on page 98 has several cookware items I'll be checking out myself.

As usual, our contributors really delivered with their stories for this issue. Dr. Joe Alton has a great piece on how to properly treat burn injuries. Angeline Hawkes shows us how to properly use dehydrated foods as well as how to protect our woodpile from all manner of problems. Amy Grisak takes us step by step in building a cold frame. Craig Caudill shows us how to track deer and other game.

Our goal is to provide you with practical, actionable information that you can put to use in your life. We want to increase your personal self-reliance and help you thrive no matter where you live. Welcome to the backwoods!

JIM COBB

The advice given in this magazine is the opinion of the author of each article based on their personal experiences and knowledge. The right response to a disaster may not be the same in all situations. Articles are for informational purposes only. The publisher accepts no responsibility for injuries or liability arising from relying upon information contained herein. In the event of an emergency, follow the advice of first responders and trained professionals. Have a preparedness plan researched from multiple sources and avoid high-risk situations. Follow all applicable federal, state and local laws for firearm ownership, carry and usage.

CHAPTER 1

OUTDOORS

HEAD OUT THERE AND HAVE FUN EXPLORING MOTHER NATURE.

THE SPOT DOESN'T NEED TO BE FLAWLESS, BUT IT DOES NEED TO BE SAFE!

Take a good look around the location before you unload all of your gear and start to set up camp.

THE PERFECT CAMPSITE?

Identifying hidden dangers around base camp

BY MICHAEL D'ANGONA

YOU'VE TREKKED FAR INTO THE WOODS AND HAD A LONG DAY. YOU FINALLY FIND A SPOT TO SET UP CAMP AND LOOK FORWARD TO SOME FOOD, RELAXATION AND WELL-DESERVED SHUT-EYE.

But your ideal campsite may be far from the safe haven you initially thought. Unbeknownst to you, there could be hidden dangers all around you taking many forms, and these could very well end your enjoyable outdoor time in an instant. Here, we'll dig deep to uncover these possible perils, show you how to detect them and direct you to safer alternatives.

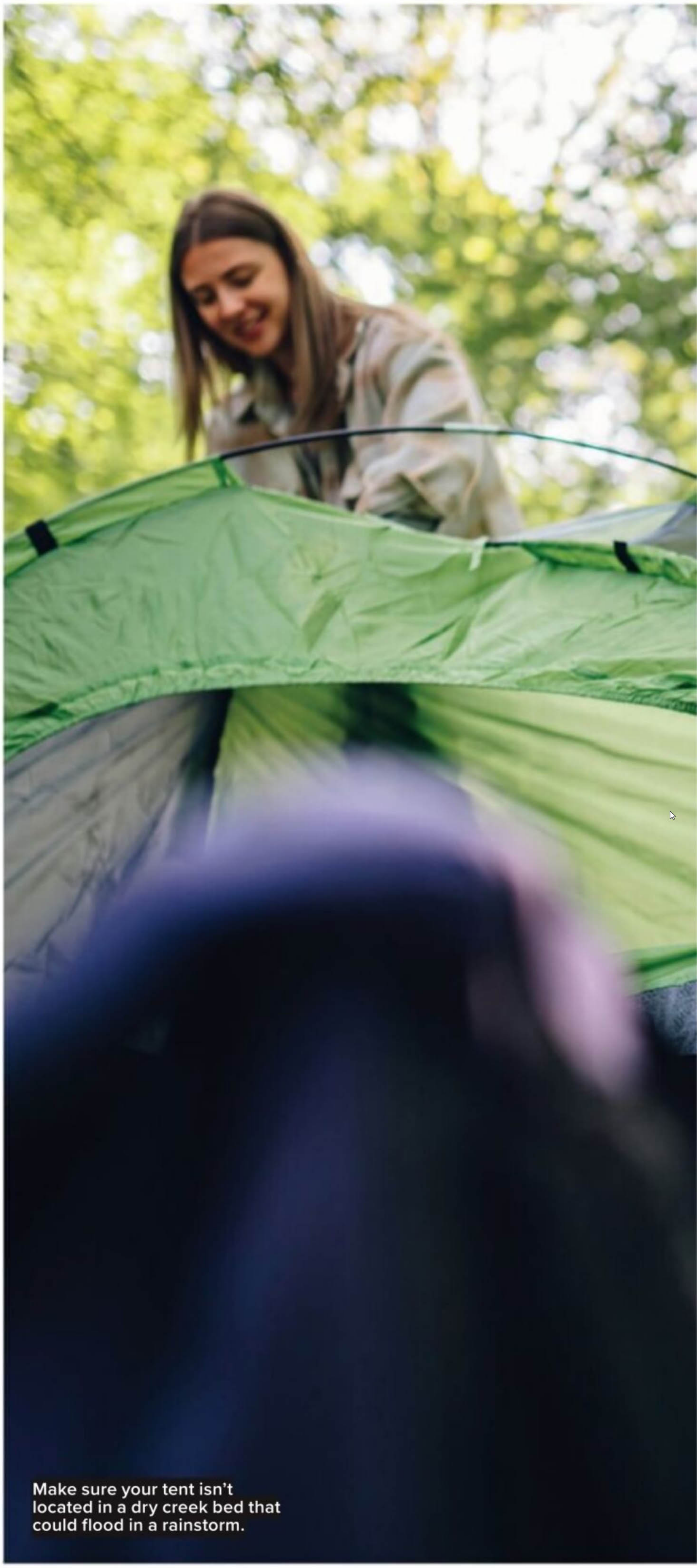
DEADLY SHADE

In spring and summer, the sun can be blistering and relentless, making you seek out even the slightest amount of shade for some temporary comfort. With this mindset, many people may opt to set up camp under the protection of large trees, using their leaf-filled branches to create a natural barrier from the sun. In theory, this is a logical course of action. In reality, not so much. Hidden among the live boughs may lurk some dead branches far up in the canopy. These represent trouble waiting to happen. Whether due to a bad storm that includes intense winds or just by a sheer bad coincidence, these branches can become deadly when they break and fall downward. Your tent wouldn't stand a chance to deflect these heavy limbs. In the forestry world, these are called widow-makers, and their name says it all. To avoid this hazard, either position your camp adjacent to a large mass of trees, enjoying shade at certain parts of the day, or by thoroughly inspecting the trees above you and if some dead limbs are found, use a rope and pull them down prior to setting up camp.

WATCH FOR NEARBY ANIMAL TRAILS, AS THEY MIGHT INDICATE POTENTIAL PROBLEMS WITH FURRY NEIGHBORS.

WATER TROUBLES

Although the draw of staying close to a water source may be convenient, it could also create major unexpected problems. Low-lying areas could be prone to flooding during intense rainstorms. These could come on fast and furious, with one minute you're falling asleep, then a short time later your camp is under 6 inches of water.



Make sure your tent isn't located in a dry creek bed that could flood in a rainstorm.

This may not be life-threatening on a small scale, but your gear and other items may get damaged or carried away in the rushing water. Water sources are also breeding grounds for numerous biting insects—and with your camp nearby, you may become a target for their relentless attacks. Although your tent may shield you from the swarms, once you're up and out in the open, you are fair game to mosquitoes and biting flies. The easy fix to this would be for you to position your camp farther away from creeks, ponds or other small bodies of water and be mindful of your elevation. Camp setup should either be at higher elevations—not in the path of downhill flow—or on even ground not susceptible flooding.

ENCOUNTERING CRITTERS

If you position your campsite near noticeable animal trails, like those leading to a water source, then you're opening your campsite up to nature's diverse wildlife. While some may harmlessly pass your camp during the night, others may take an interest due to natural curiosity—or even detection of your food supply. From foxes to raccoons to hungry bears, you run the risk of bites or worse from these animals. Naturally, you should try your best to position your camp away from noticeable trails. But if for some reason you have no other options, then secure your food in bear-resistant containers, suspend it from trees in bear bags, or stash it in bear-proof metal boxes. Try your best to suppress the attractiveness of your food to nature's nearby residents.

FRIED FROM THE SKY

If you feel getting struck by lightning won't happen to you, then you're sorely mistaken. Lightning strikes Earth an estimated 8 million times a day—and with those numbers, you need to minimize your chances of being struck. Although the single tree you choose to camp near may provide you with shade, it also can act as one of Mother Nature's lightning rods. The tree could be struck and the residual charge could reach your campsite. Additionally, any damage to the tree from the lightning strike could result in potential projectiles or dead fall debris that drops down onto your tents. Prevent this by avoiding tall-standing single trees. Also, setting up camp on a high ridge is a

BE FAMILIAR WITH THE WILDLIFE HAZARDS COMMON TO THE AREA IN WHICH YOU'LL BE CAMPING AND KNOW WHAT TO DO ABOUT THEM.

On the one hand, getting this close to nature could be exciting. On the other hand, it might be a little *too* exciting.

potential lightning risk, as your camp could be the tallest object there and be the recipient of a deadly strike.

NATURE'S FURY

As mentioned earlier, nature can be a beast at times, and your campsite could be in Mother Nature's sights. Intense winds can destabilize your tent or create havoc with lightweight items around your camp. Rainstorms can come upon you suddenly, and if you happen to position your tents under a large mass of trees, you could endure seemingly endless water dripping that will decrease your tent's drying capabilities. Additionally, if you position your camp out in the open in the summer months, the intense afternoon sun may heat your camp to an unbearable degree. To counter nature's intense range of conditions, try to find natural wind-shielding obstacles, like rock formations or clumped tree masses, and utilize natural shade whenever possible. Because of various natural conditions you may face, you need to weigh all options that are best for you before hammering in that first tent stake.

BE CAUTIOUS, THEN ENJOY

Nature can be both breathtaking and deadly. Spending time in the deep outdoors can be rewarding in numerous ways. However, don't underestimate the hidden dangers that lurk amid its natural beauty. Although you may be tempted to set your up campsite just about anywhere, this could be a very bad mistake. Take time to survey the area and determine its safety first. Only then can you sleep with peace of mind under the stars.

How will your tent hold up to pounding rain and driving wind? Best to know this ahead of time.

THE PERFECT TENT?

Don't just buy the first tent off the shelf or the one on sale at a great price when you're shopping on your favorite outdoor gear website. Follow these must-consider categories to make an informed shelter choice.

- **Size and Interior Capacity** You want enough space to comfortably fit people and gear, but not too much to become cumbersome when carried or a hassle to set up. The best rule of thumb is to choose a tent just slightly larger than your needs.

- **Ease of Set-Up** Some are a breeze to set up, while others seem to take a Ph.D. in architectural engineering to erect. If you get irritated easily and just want to settle in quickly for the night, then opt for the simple-step versions. You may pay more, but it will be worth it when daylight starts fading.

- **Weatherproofing Characteristics** Do your homework prior to buying and choose the model with a proven track record of keeping moisture, wind and intense sunlight out.

- **Quality of Materials** There are economical models that do the job, but more times than not, skimping on quality will bite you later. Material rips, zippers break and poles snap—all the things that will turn your dream time out in nature a true nightmare.

- **Bells & Whistles** Do you want the bare bones or go all in with every bell and whistle you can add to your tent? You need to find the best balance between convenience and gear storage overload.

Michael D'Angona is a freelance writer, author, martial artist and survival skill practitioner. He has published hundreds of articles encompassing such topics as self-defense, preparedness, product reviews and outdoor skills. He currently offers his books for purchase and magazine writing services at mjd-writersresourc.wixsite.com/my-site.

Because they're such a common type of injury, it's important to know how to treat burns effectively.

ABC OF BURNS

Dealing with heat-related injuries

BY JOE ALTON, MD

OFF THE GRID, A NUMBER OF SITUATIONS CAN PUT YOUR FAMILY AT RISK FOR HEAT-RELATED INJURIES. BURNS ARE COMMON INJURIES EVEN ON THE GRID, CAUSING 500,000 HOSPITAL VISITS ANNUALLY.

The consequences can be horrific, including infection and scarring. Knowing how to evaluate and treat burns is an important skill for the backwoods medic on or off the road. Any disaster that robs you of electricity increases your chances of getting a burn. In these cases, it's likely you'll have to cook food over a fire of your own making. Starting and maintaining a campfire is something very few do on a regular basis. As such, the off-grid medic can expect to be confronted with burn injuries at one point or another.

CAUSES OF BURNS

Most burns are the result of contact with something very hot. Wildfires come to mind, but heat-related injuries can also be caused by exposure to sources other than flames. They include:

- Scalds due to contact with hot water or steam.
- Contact with electricity associated with lightning or another source.
- Friction burns due to contact with hard surfaces such as roads (road rash), carpets or hard flooring.
- Skin exposure to extreme cold and winds. (Yes, extreme cold can cause burns.)
- Chemical spills.
- Radiation due to contact with energy emitted by X-rays, other medical imaging/treatment, "dirty bombs" or thermonuclear explosions.

RULE OF NINES

The severity of a burn depends on the total body surface area affected and the depth of the damage. The total area affected can be estimated by using the classic "Rule of Nines." It divides the body into regions, each representing multiples of 9% of the total body surface.

- Head and neck: 9%
- Each upper extremity: 9%
- Each lower extremity: 18%
- Front of the torso 18%
- Back of the torso: 18%
- Genitalia: 1%

Due to differences in body shape, the rule of nines doesn't quite apply to toddlers. Adjustments are made due to their proportionally larger heads and smaller legs.

DIAGNOSIS AND TREATMENT

The degree of the burn, based upon the depth, is also extremely important and is a key factor in the recovery process. To start, let's dispel some treatment myths: Avoid the use of lard or butter on

MAKE SURE YOUR FIRST-AID KITS HAVE BURN TREATMENT SUPPLIES READILY AVAILABLE!

Run the burn under cool water for 15 minutes (or cover it with a cool, wet cloth), pat dry, then apply ointments or creams before dressing the wound.

burns. They tend to keep in heat and may worsen the injury. Egg whites and toothpaste, long considered to be home remedies, may actually increase the risk of infection in burn wounds. It's better to use sterile saline solution to keep the burn area and dressing moist, especially in more severe burns.

Wearing gloves will limit the risk of infecting the wound while you treat it.

FIRST-DEGREE BURNS

These are superficial burns affecting only the outermost layer of skin, known as the epidermis. A mild sunburn is a common example. The skin will appear red, warm and dry. Expect it to be painful to the touch, especially when large areas of skin are involved. Fortunately, major complications are rare.

Treatment is simply focused on relieving discomfort. Immersion in a cool bath will be helpful; at the very least, run cool water over the injury. A cool, moist cloth on the burn for 20 minutes will give some relief. So will anti-inflammatory medicines such as ibuprofen.

Studies have shown that taking 2000 to 3000 mg of vitamin C with 1000 IU vitamin E once after sun exposure may treat or even prevent significant sunburn. Aloe vera, zinc oxide and benzocaine sprays are well-known alternatives.

Expect the redness to worsen for a few hours before it improves. Recovery takes 24 to 48 hours. Until then, avoid constrictive, tight clothing and wear light cotton fabrics. A number of natural remedies—like honey, vinegar, black tea, witch hazel and comfrey are acceptable options—as burn treatment in the form of cool (not cold) compresses.

SECOND-DEGREE BURNS

Second-degree burns are deeper injuries that penetrate through the superficial epidermis and partially through the deeper layer of the skin (the dermis). Thus, they're often called partial thickness burns. While first-degree burns may cover a large percentage of surface area without becoming life-threatening, a smaller percentage of the body covered with significant second-degree burns may require serious medical intervention.

Like with first-degree burns, the burned area will be red and painful. However, unlike first-degree injuries, which appear dry, second-degree burns will be moist and often have blisters with reddened bases. The area will tend to weep clear or whitish fluid. Second-degree burns will cause swelling as well, so remove jewelry like rings and bracelets immediately.

To treat second degrees burns, remove the victim from the heat source immediately. Run cool water over the injury for 15 minutes, but avoid ice, which will traumatize the already damaged skin. After running water over the wound, pat the area dry.

The next step is to apply moist skin dressings such as Xeroform, Spenco Second Skin or nonstick dressings with layers of products like aloe vera, Silvadene or Aquaphor. Be sure to replace dressings regularly and

Never leave a hot stove unattended when small children are present.

BURN PREVENTION

Burn prevention focuses on ensuring a safe environment. Key strategies include maintaining a safe cooking area, practicing proper hot liquid and electrical safety, and being aware of open flames and chemicals.

In the Home

- Turn cookware handles inward on stoves to prevent spills.
- Never leave cooking items unattended.
- Create a "child-free" area around the stove while cooking.
- Keep flammable materials away from heat sources.
- Set water heater temperature to 120 F or lower to prevent scalding.
- Supervise children closely during bath time.
- Replace electrical cords that are frayed or damaged.
- Cover electrical outlets to prevent accidental contact.
- Test smoke alarms and change batteries regularly.
- Store chemicals and cleaning supplies out of reach of children.

In the Great Outdoors

- Use sunscreen to protect skin from sunburn; reapply frequently.
- Avoid outdoor work sessions during the hottest part of the day.
- Wear protective headgear and clothing in the hot sun.
- Keep a 3-foot safety zone around grills and fire pits.
- Use long-handled tools to manipulate cookware.
- Consider the right clothing (short sleeves or rolled-up sleeves) when cooking over open fires.
- Wear heat- and electrical-protective gloves when appropriate.
- Avoid using gasoline to start charcoal grills or campfires.
- Extinguish campfires completely when finished.

Harnessing the power of fire was a big step for mankind. Be careful with it and you'll avoid a major bump in the backwoods road.

review the progress of healing. Other actions should include:

- Elevating burned extremities.
- Applying cool, not cold, compresses.
- Giving oral pain relief such as ibuprofen.
- Applying anesthetic creams such as benzocaine or lidocaine.
- Placing a barrier between adjacent burned fingers and toes.
- Encouraging hydration.

NEVER USE ICE TO COOL A BURN INJURY, AS THIS CAN WORSEN THE PROBLEM BY TRAUMATIZING THE WOUND FURTHER. JUST USE COOL WATER.

It's important to avoid peeling burned skin from a second-degree burn, as it sometimes comes off in sheets. This leaves even more raw tissue exposed. I experienced this myself at 8 years old when my well-meaning parents peeled off about 12 inches of peeling skin off my back in one move, leaving a red, painful patch that took quite a while to heal.

If the patient is having problems sleeping, use a product called a blanket lifter or improvise one to keep sheets from touching extensive and painful burns.

Should you pop blisters associated with second-degree burns? It's wisest to avoid the lancing of blisters, if possible, unless they're infected and filled with pus. Some very large blisters will, however, break with the slightest pressure and may benefit from controlled drainage. If this is the case, use a sterilized needle or scalpel blade to pierce the side of the blister near the base. The roof of the blister is often retained to provide additional protection to the healing skin beneath.

THIRD- AND FOURTH-DEGREE BURNS

These injuries, known as full-thickness burns, destroy both the epidermis and dermis and extend into the tissue beneath. Fat and muscle are often involved. The wound may appear white, charred or leathery. If significant tissue is lost, the burned area may appear indented. Swelling is common, but pain may be minimal due to damage to sensory nerves. Discomfort may be most noted in the less-burned outer borders of the injury.

Some add a fourth-degree category to their classification. These are the most severe burns, extending through all layers of the skin and into muscles, tendons and even bone. They are often charred or blackened, and can be life-threatening.

If confronted with this type of injury:

1) Remove the heat source immediately.
2) Run cool water over the burn for at least 20 minutes as soon as possible. Don't use ice, which can traumatize the wound.
3) Remove rings and jewelry before swelling develops.
4) Remove loose debris like smoldering clothing. If clothing sticks to skin, cut around it.
5) Elevate the burned extremity.
6) Cover the wound loosely, but don't wrap a bandage all the way around an arm or leg. The dressing should cover at least 3 inches over each edge of the burn's borders.

Third-degree burns or worse will rapidly cause dehydration, because the protective layer (the skin) that holds fluids in is lost. Broken capillaries will leak fluid into the wound around the clock. Off the grid, replacing liquids with oral rehydration solution, if available, is essential to keep the patient stable. In areas with access to modern medicine, all third-degree burn victims are treated with intravenous fluids. Indeed, the loss of fluids may be so rapid that they can only be replaced intravenously, presenting a major challenge for the backwoods medic due to lack of access to these prescription items. If available, Lactated Ringer's solution, an IV fluid close in electrolyte content to natural plasma, is preferred. A method of hydrating an unconscious victim, known as rectal rehydration, was used in World War I. It may be your best option when you're off the grid.

Joe Alton, MD, is a physician, medical preparedness advocate, and *New York Times* bestselling author of *The Survival Medicine Handbook: The Essential Guide For When Help Is NOT On The Way* and other books. He also designs quality medical kits, which are available at altonfirstaid.com.

If you're going to hunt, you'd better know how to read sign and follow your prey effectively.

REAL-TIME

TRACKING

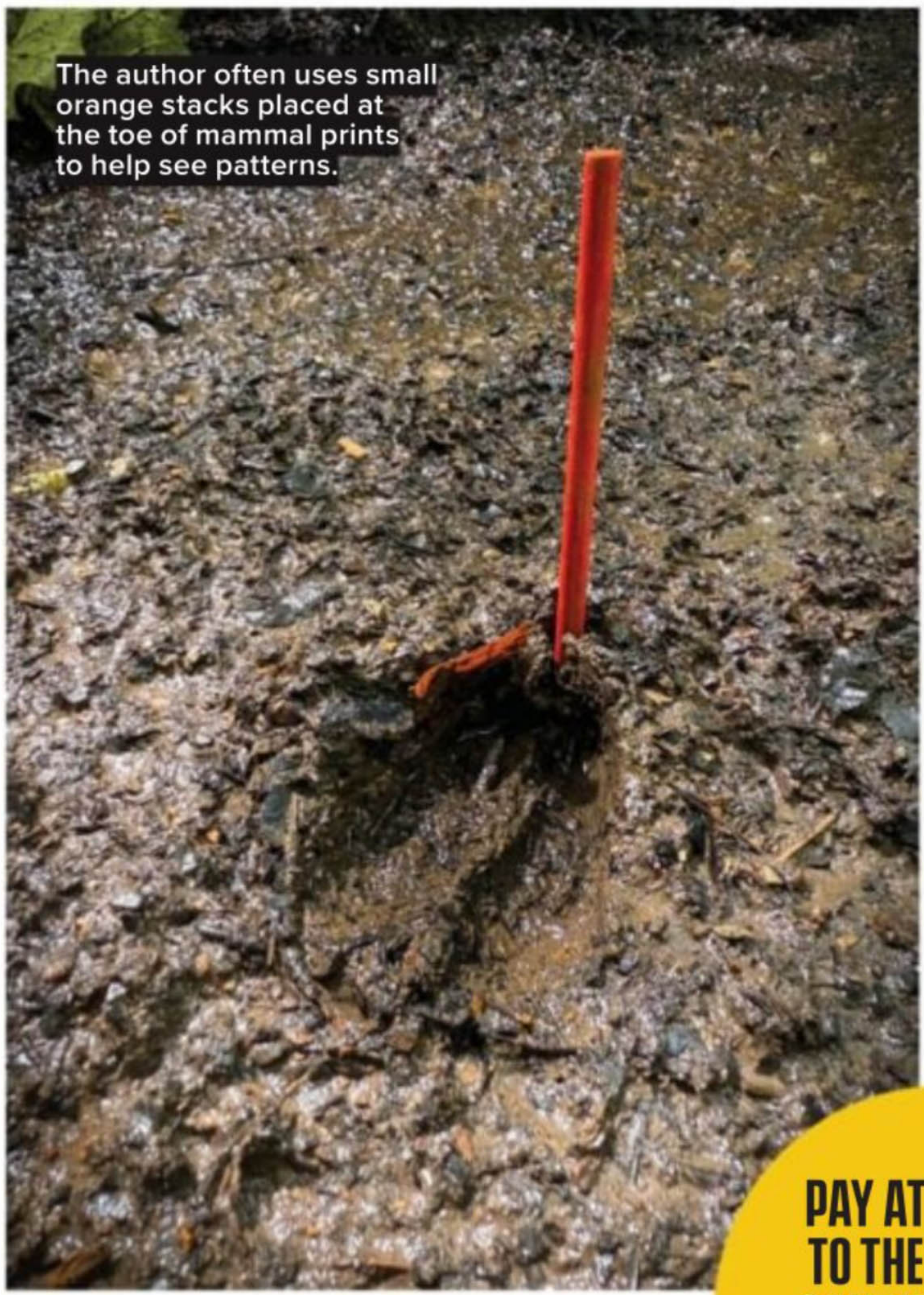
How to actually follow a deer

BY CRAIG CAUDILL

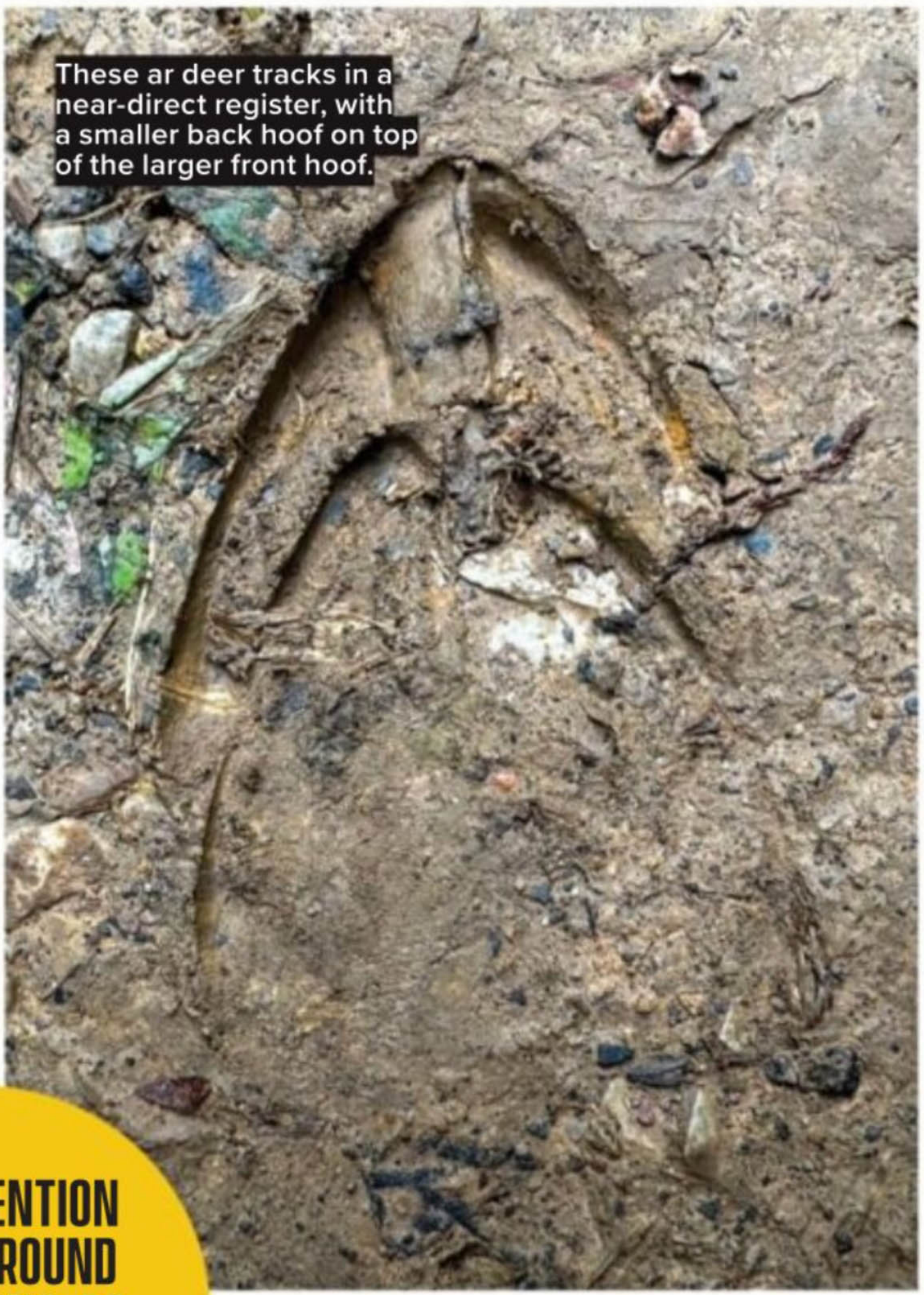
IT'S BEEN SAID THAT TRACKING IS ONE OF THE OLDEST FORMS OF COMMUNICATION IN THE WORLD. LONG BEFORE WE HAD WRITTEN LANGUAGE OR SATELLITE MAPS, HUMANS WERE READING THE GROUND.

They gathered information about animals, the weather and each other simply by observing what was left behind. But tracking goes deeper than identifying a hoofprint or a claw mark. It's about interpreting the ever-evolving story nature is telling us in real time.

In this article, we'll focus on one of the most practical and rewarding tracking skills: how to follow deer sign before, during and after the hunt. This is the art of real-time tracking, how to move through the woods with awareness, adapt when sign goes cold—and read more than just prints.

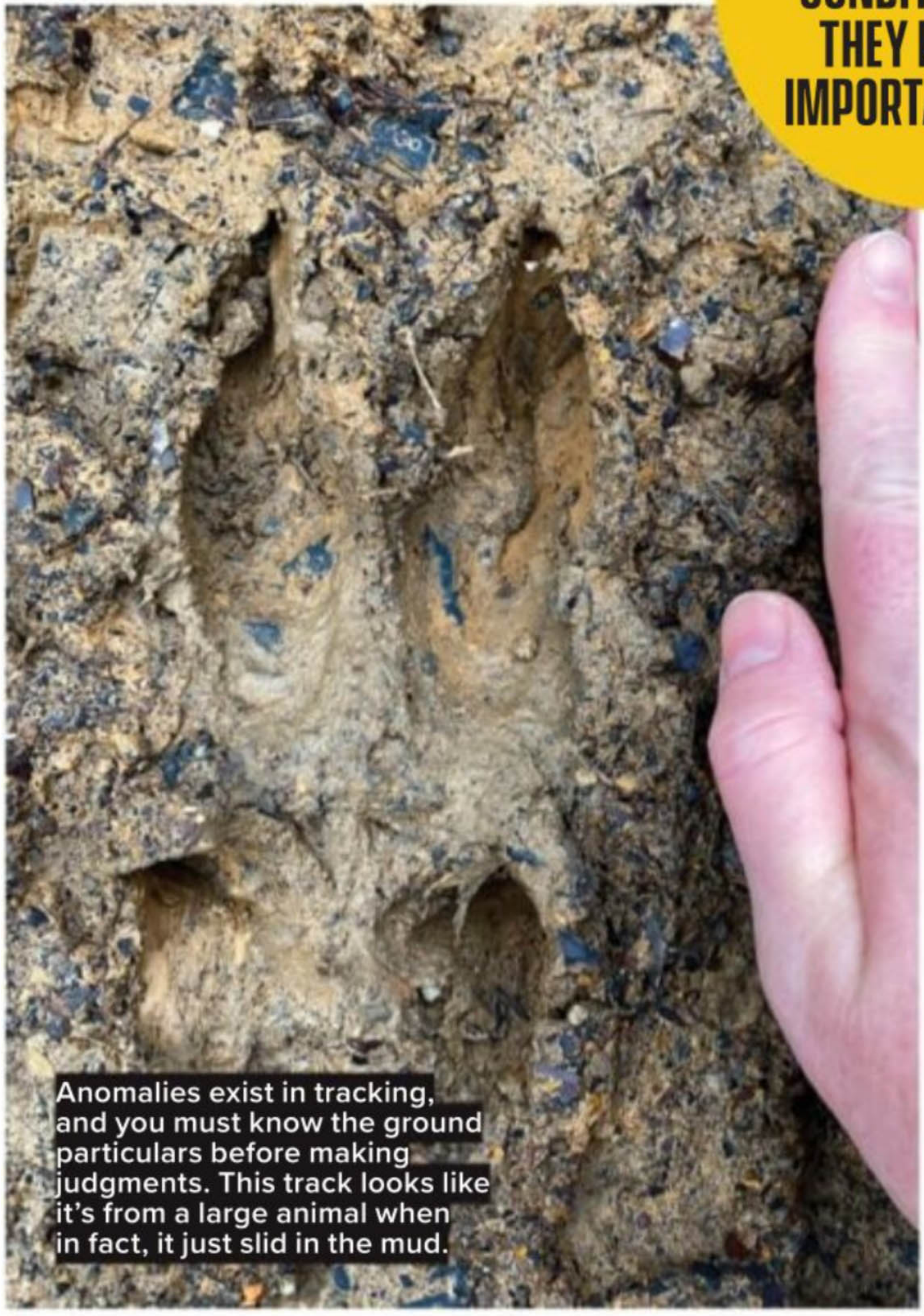


The author often uses small orange stacks placed at the toe of mammal prints to help see patterns.

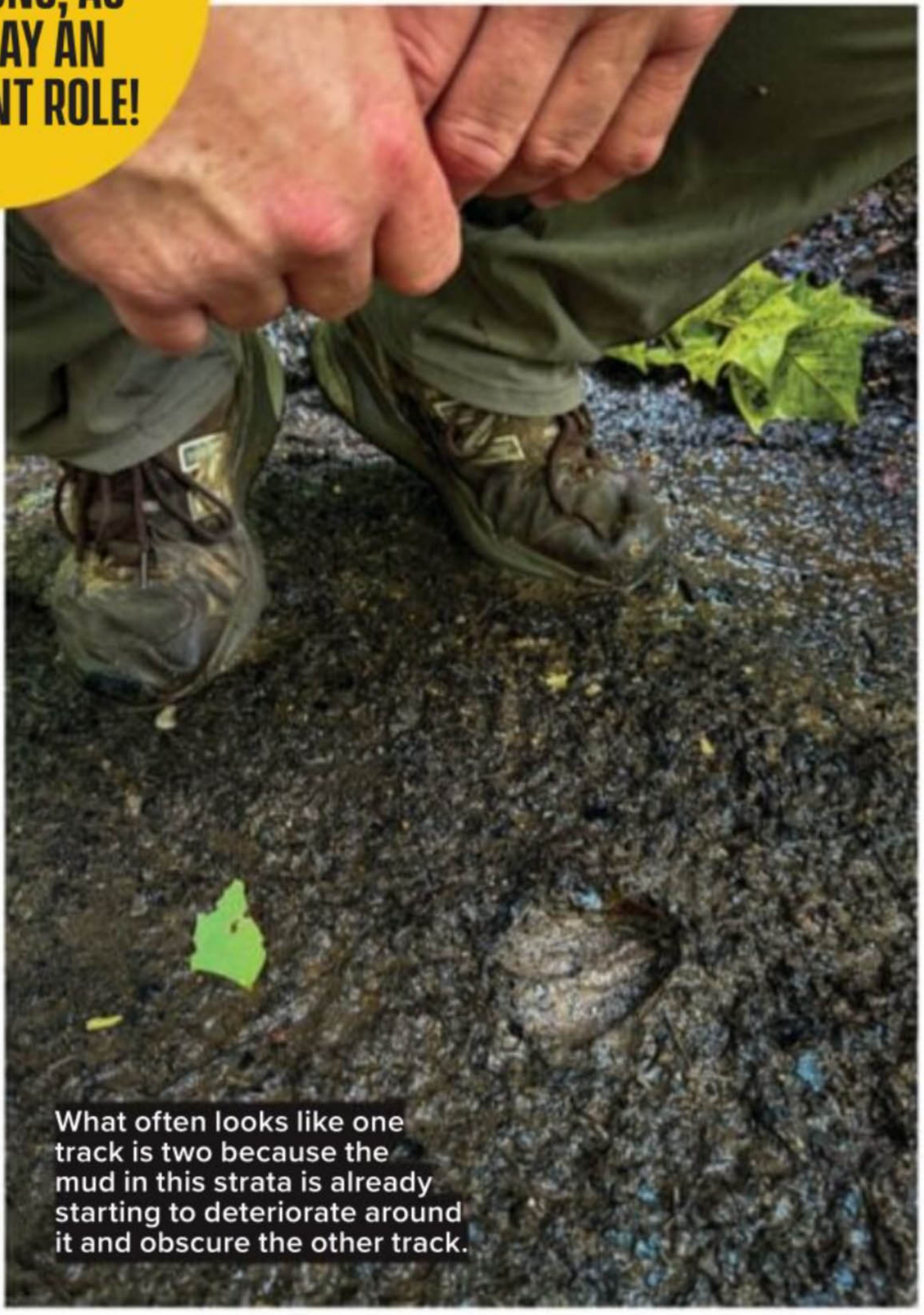


These ar deer tracks in a near-direct register, with a smaller back hoof on top of the larger front hoof.

PAY ATTENTION TO THE GROUND CONDITIONS, AS THEY PLAY AN IMPORTANT ROLE!



Anomalies exist in tracking, and you must know the ground particulars before making judgments. This track looks like it's from a large animal when in fact, it just slid in the mud.



What often looks like one track is two because the mud in this strata is already starting to deteriorate around it and obscure the other track.

FOUR RULES OF TRACKING

No matter what, or who, you are tracking, these four rules apply. They form the foundation of every good tracker's discipline.

1. Never Force a Track to Appear

It's easy to look at a smudge in the dirt and convince yourself it's a track. But good trackers don't impose meaning; they observe. Let the sign speak for itself, even if it tells you something unexpected.

2. Monitor Baseline and Disturbance

Always keep an eye on the environment's natural baseline: how the ground, vegetation and surroundings appear in an undisturbed state. From there, you can detect disturbance, or any alteration caused by the passage of your quarry, like overturned leaves, broken twigs or compressed grass.

3. Look Up Often

While we're trained to look down at the ground, it's critical to look up frequently. Your quarry should be in front of you, not beneath you. This also keeps you safer in unfamiliar terrain and ensures you don't become so focused on prints that you become lost yourself. Know where you are and how to get back. Practice your land navigation regularly.

The author often gets started tracking by following deer trails just below the crest of hills. They are easy to find when they cross roads or other trails.

4. Never Contaminate the Track Line

Walking directly on a track line destroys the clues you may need later. If you lose the trail and have disturbed the area, recovering it becomes exponentially harder. Always follow from the side, keeping the original line undisturbed.

PATTERNS OF MOVEMENT

Every animal moves differently, and recognizing these patterns helps narrow down what you're tracking, even when the prints are faint.

There are four basic movement categories: walkers, hoppers, bounders and waddlers. Since our focus here is on deer, it's important to recognize that they are walkers, and very efficient ones at that. These animals move with a front foot followed by the opposite rear foot. Their hind feet often land directly on or near their front foot's print, a motion known as direct

LEARN MORE ABOUT TRACKING

If you're ready to take your tracking skills to the next level, check out my pocket-size field guide, available at naturereliance.org or on Amazon. It's packed with practical, field-tested knowledge, including:

- The character traits of a tracker.
- Pre-, during-, and post-tracking procedures.
- The 10 questions every tracker should ask when seeing sign.
- A deep dive into types of sign and movement patterns.
- Species-specific tracking insights.
- A detailed chart for tracks and scat identification.
- And lots more!

This guide is built for the back pocket and is loaded with the real-world information you'll need to become a skilled and confident tracker.

register. Deer, dogs and cats fall into this group.

READING DEER SIGN IN REAL TIME

Whitetail deer are among the most encountered wild animals in North America. Their tracks are easy to recognize: two-pointed hoof marks with a split down the middle. You can easily see the track outline and think it looks like a heart, or some say they see an arrowhead in the outline. Following them in motion takes more skill.

The largest foot of most mammals is typically the one that carries most of the weight. A deer's front hoofs are slightly larger than the rear, because they carry half the body, the neck and the head. When tracking a moving deer, watch for:

- Consistent spacing in stride and straddle.
- Directional indicators like kicked-back debris.
- Rubs and scrapes that help orient your line of travel.
- Fresh droppings or urine.
- Interrupted leaf litter and bent grass.

By comparing the size and freshness of the tracks with the surrounding disturbance, you can determine the speed and direction, and estimate how recently the animal passed through.

AGING THE SIGN

Being able to estimate how fresh a track or other sign is can help you gauge how close the animal might be. Keep in mind that aging signs depend heavily on weather patterns. Wind and water can quickly break down a fresh track, while clay soil and the like will hold a piece of sign for many days and look like it did when it was made. Here are a couple of quick field checks:

- **Water** Fresh tracks near water sources often show visible splashing or wet impressions. If the splash marks are crisp and haven't started to dry, the animal was there very recently.

- **Mud** In stiff or tacky mud, new tracks will show fine lines and ridges inside the print. As time passes, these ridges will dry out, harden, and eventually crumble or collapse inward. That's your sign that the track is aging out.

WATCH WHERE YOU WALK SO YOU DON'T CONTAMINATE THE TRACK LINE AS YOU WORK. WALK NEXT TO THE TRACKS, NOT ON TOP OF THEM.

Tracking is a time-sensitive skill. The sooner you can get on the line, the better chance you have of reading accurate information.

LOSING THE TRAIL

Losing the sign happens to every tracker at some point, usually on every track line. It is a myth that a tracker can get on a track line and quickly find every single track in a wooded environment. Here's how to respond when you lose the sign, so you can take a systematic approach.

1. Three Likely Lines Start by visualizing three probable directions of travel from the last known point. Where would the deer likely go next based on terrain, cover, food or water sources? Begin checking those lines first.

2. Tracker 360 Make a wide circular path with the last known track at the center. This allows you to pick up new sign from multiple angles and reestablish the trail. Sometimes a track just off your original line reveals the deer adjusted its course slightly.

3. Track Traps Look ahead for track traps. These are places where sign is more likely to appear due to the nature of the ground, such as:

- Muddy or sandy patches.
- Creek beds and drainages.
- Exposed soft earth under trees.
- Dew-covered or frost-covered grass.
- Tall grass of any kind.

Move from one track trap to another, scanning broadly.

BLOOD SPOOR

When tracking a wounded deer on a hunt, blood spoor can offer vital information about the type and severity of the wound. Understanding the difference can guide your decisions on when to advance and when to back off.

- **Arterial Blood** This is bright red, oxygen-rich blood that comes directly from the heart. It may appear in sprays or pulses. A deer hit in this way is usually on a short clock, as it will bleed out quickly.

- **Venous Blood** Darker red and slower to appear, this blood is returning to the heart. A deer with a venous hit can often travel farther and survive longer, so patience and careful tracking are essential.

- **Lung Blood** Pink in color and often frothy or bubbly, this indicates a hit to the lungs where air and blood mix. This is a lethal wound, but the animal may cover a lot of ground if pressured too soon.

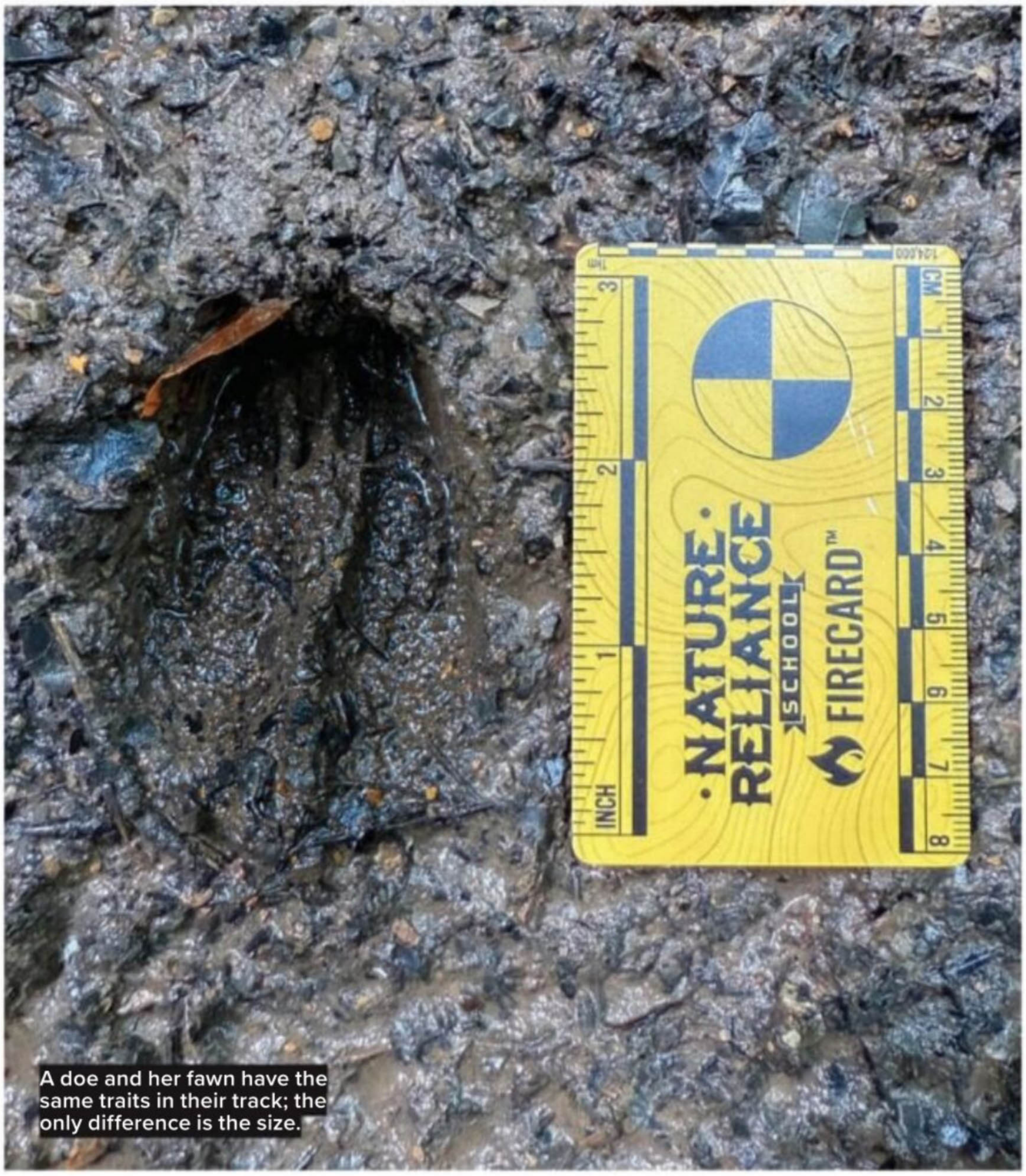
- **Digestive (Gut) Shot** This blood often has a greenish tinge from bile and carries a foul smell.

A gut-shot deer can live for many hours or more. Pushing it too early often leads to a long and difficult track. It's best to wait, sometimes overnight, before following up.

Being able to read these signs helps you track more effectively and also make more ethical decisions in the field.

BOX SEARCH

If all else fails, conduct a box search, especially where terrain changes from one type to another (woodline to field, for instance). Deer often pause or redirect in these transitional zones. Move in a grid pattern across the area, watching for fresh sign or broken vegetation.



A doe and her fawn have the same traits in their track; the only difference is the size.

Craig Caudill is the director of Nature Reliance School and the author of multiple books on survival, tracking and outdoor skills. He teaches classes across the country and consults for TV, law enforcement and private organizations. Find his work at naturereliance.org.

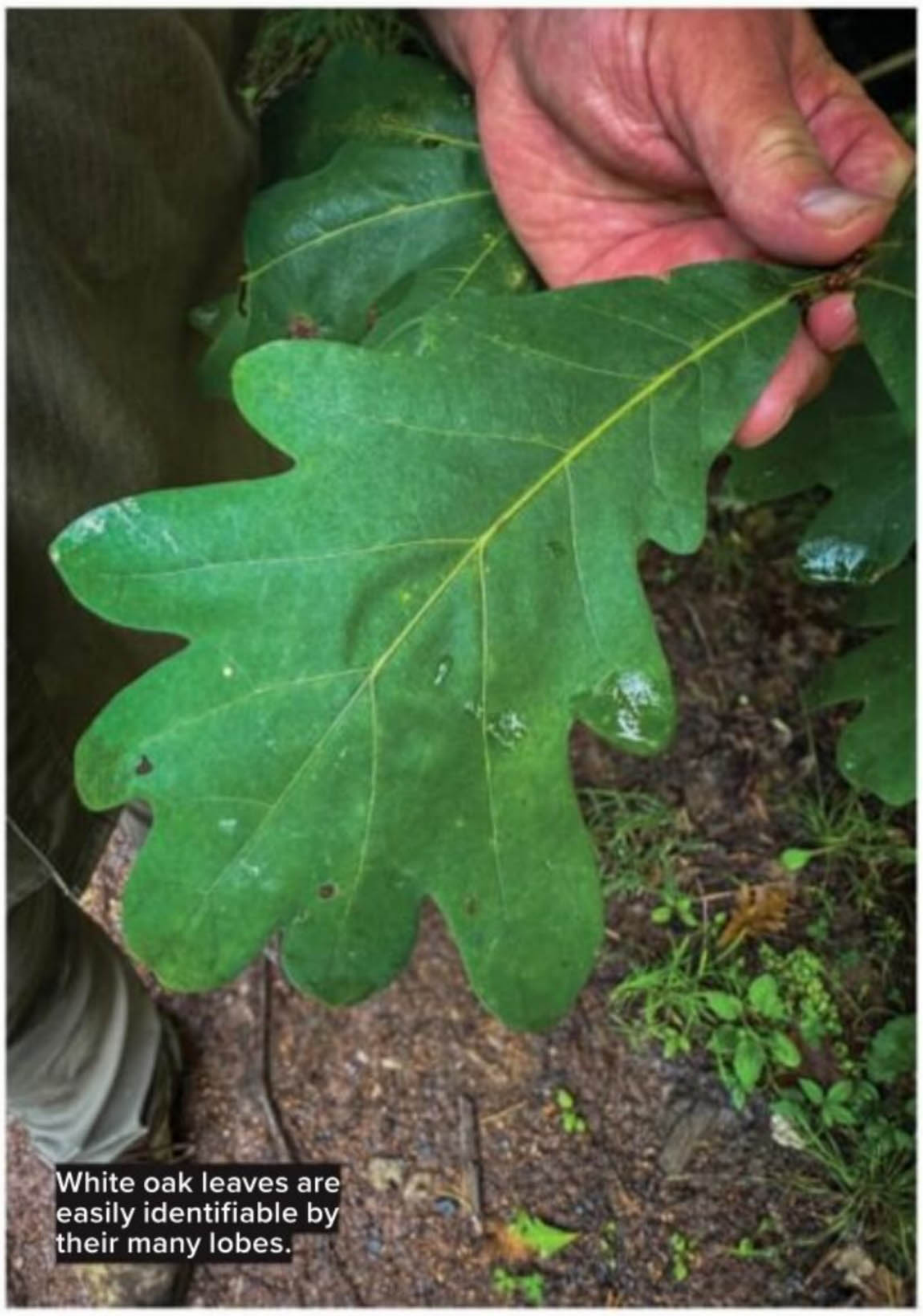
When we talk about wild edible and medicinal plants, we often concentrate on ground level. But many trees offer us these resources, too.

LOOK UP

Edible, useful and medicinal trees

BY CRAIG CAUDILL

WHEN THE FOREST FLOOR TURNS EMPTY AND THE USUAL WEEDS AND GREENS VANISH WITH THE SEASON, YOUR FOOD AND MEDICINE DON'T HAVE TO.


White oak leaves are easily identifiable by their many lobes.

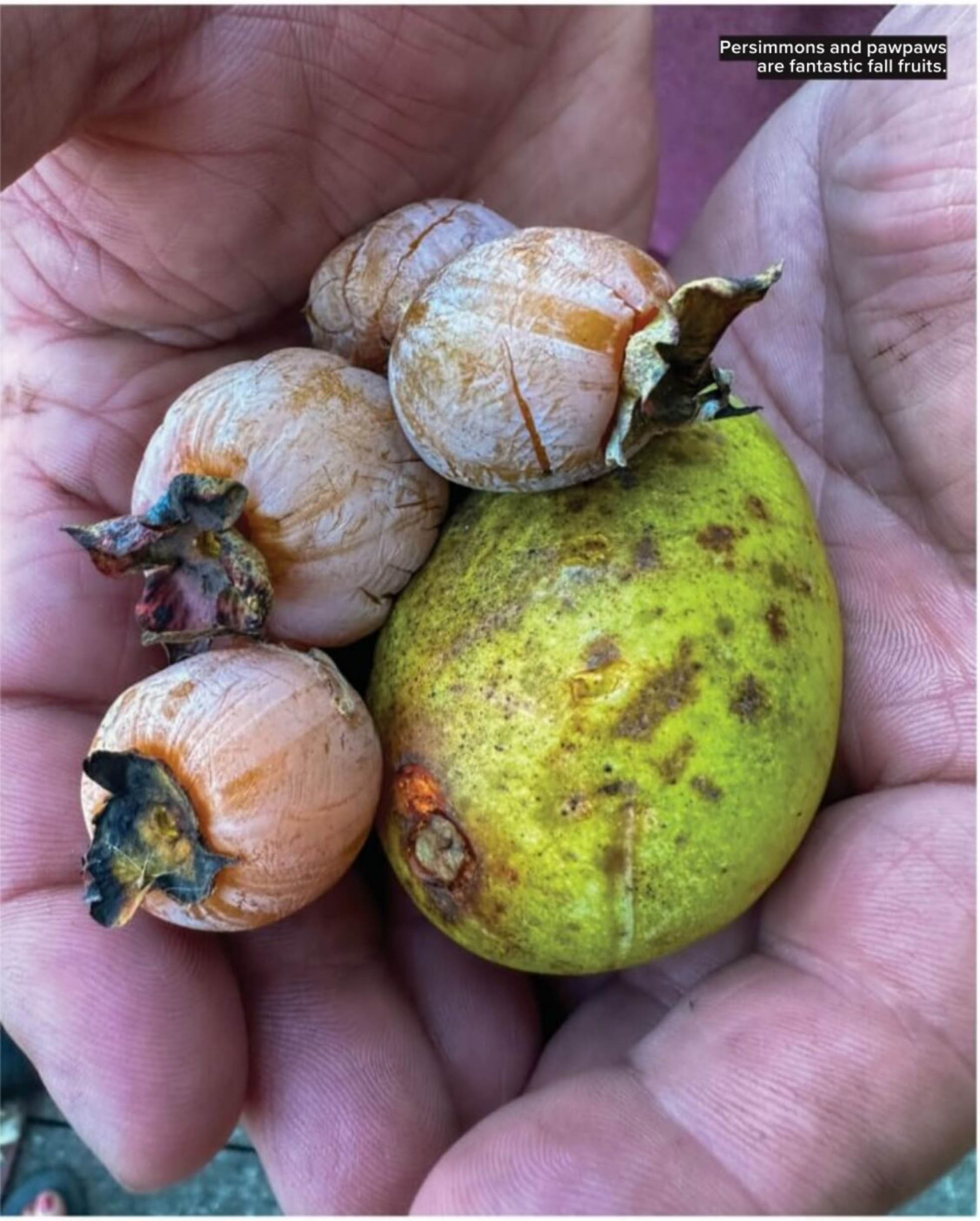
People have been eating acorns, properly prepared, for centuries.

Survival-savvy outdoorsmen, bushcrafters and naturalists know that some of the most reliable resources in the woods are standing tall at or above eye level. Trees provide not only firewood, shelter and tools, but also an often-overlooked pantry of goodies—if you know where to look.

The more time you spend observing, utilizing and studying these trees, the more resilient you become in the woods. Below are some of the most useful species that offer edible or medicinal value, along with a few that provide crucial material for tools and shelter.

AMERICAN BEECH

American beech trees (Fagus grandifolia) are not only beautiful and easily recognized, but incredibly useful. The lower branches are dense with fine twigs and small branchlets. These are great for bushcraft projects such as trap triggers, pot holders or small tool handles. But the real treat comes in the form of beechnuts. These small, triangular nuts ripen in late summer to early fall and are edible either raw (in moderation) or roasted. They're high in fat and protein—just what you need on long winter days outside. Just get to them soon after they drop, because squirrels, turkeys, deer and chipmunks love them. One day, I watched a chipmunk put at least 20 of the meat nuts into his jaws and try to get into a hole. I say try because he had to unload a few before he could fit inside.



Persimmons and pawpaws are fantastic fall fruits.

PERSIMMON & PAWPAW

Fall is fruit season for the bushcraft-minded. Wild American persimmons (Diospyros virginiana) may not look like much, but once they soften and fully ripen, they're sweet and flavorful. Just be sure to wait until they're deep orange and nearly mushy—green ones will pucker your mouth like you've eaten a mouthful of cotton. Which, and I apologize for nothing, is a great prank to play on those close to you.

In the same season, pawpaw trees (Asimina triloba) offer the largest native fruit in North America. The trees are found in moist, shaded lowlands. The fruit's mango-banana-like flesh is rich in nutrients. It's soft and bruises easily, but when it's ripe, it's a pure gold mine of calories and flavor. Look for them along stream bottoms and shaded edges.

DEAD SNAGS AND DOWNED LOGS

It's not a species, but it's a vital resource. Dead standing trees, or snags, often hold insect larvae, edible grubs and useful fungi, including species like turkey tail (Trametes versicolor) and, in some cases, wild oyster mushrooms (Pleurotus ostreatus). But I do caution on this: Fungal foraging is a serious business. Misidentifying wild mushrooms can land you in a hospital or worse. Study hard, bring a reliable field guide, and when in doubt, leave them growing on the snag to work on breaking it down.

WILLOW

A time-tested field medicine, willow (Salix spp.) bark contains salicin, the same compound found in aspirin. Harvesting the inner bark and new-growth branches of willow can be useful for mild pain relief and inflammation. Never cut all the way around the trunk. Girdling a tree will kill it. Instead, take a thin vertical strip on one side, no more than a few inches wide.

SOURWOOD

An often-overlooked understory tree, sourwood (Oxydendrum arboreum) has a secret: Its leaves offer a quick sour treat that'll wake up your palate. Just pluck a leaf, tear off a corner, and chew it

EVEN DEAD TREES CAN PROVIDE RESOURCES TO THE OUTDOORSPERSON, FROM FOOD TO FIREWOOD TO SHELTER AND MORE.

Dead snags are home to numerous insects, fungi and more.

on your molars. You'll get a tangy, lemon-like flavor. It is refreshing and energizing when on the move. But as with anything wild, moderation is key. Limit your intake to small amounts.

SWEETGUM

Sweetgum (Liquidambar styraciflua) leaves have a strong, almost spicy aroma. Early settlers and pioneers would often collect and dry them to toss onto cabin fires, acting as a natural air freshener. Today, some woodsmen claim the smoke, when absorbed by your clothing, may have mild insect-repelling effects. From my experience, it certainly smells better than woodsmoke alone. Just don't overdo it, as the resin content in sweetgum can produce thick smoke.

WHITE OAK

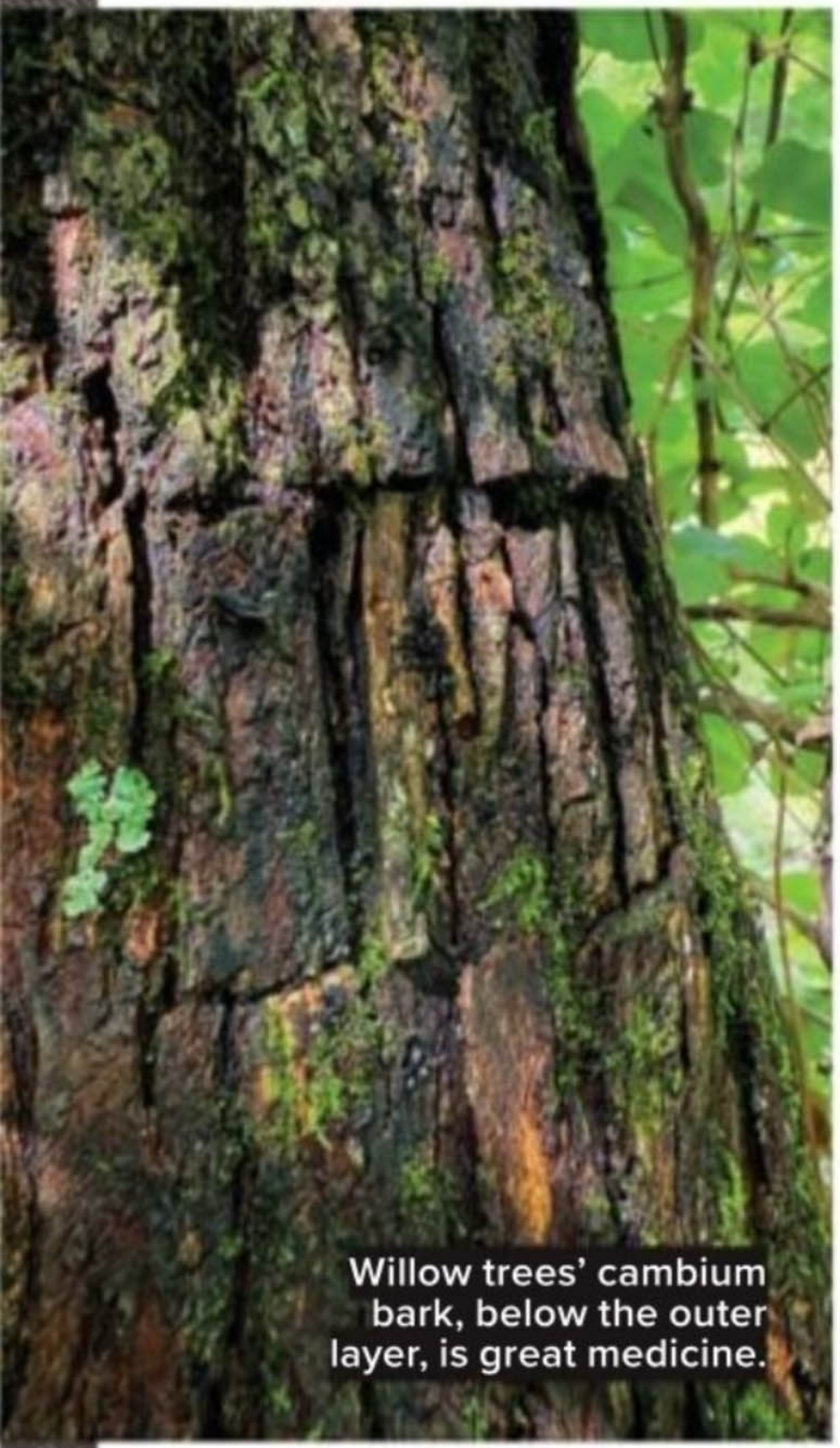
A staple of many survival food lists, the acorns of white oak (Quercus alba) are lower in bitter tannins than their red oak cousins but still need processing. Crack the shell, discard the cap, and soak or boil the acorn meat in several changes of water. Discard the water each time it darkens, as it's pulling the tannins out. Once they no longer taste bitter, they're good to eat or dry and grind into flour. The flour can be used for pancakes, bannock or as a thickener in stews.

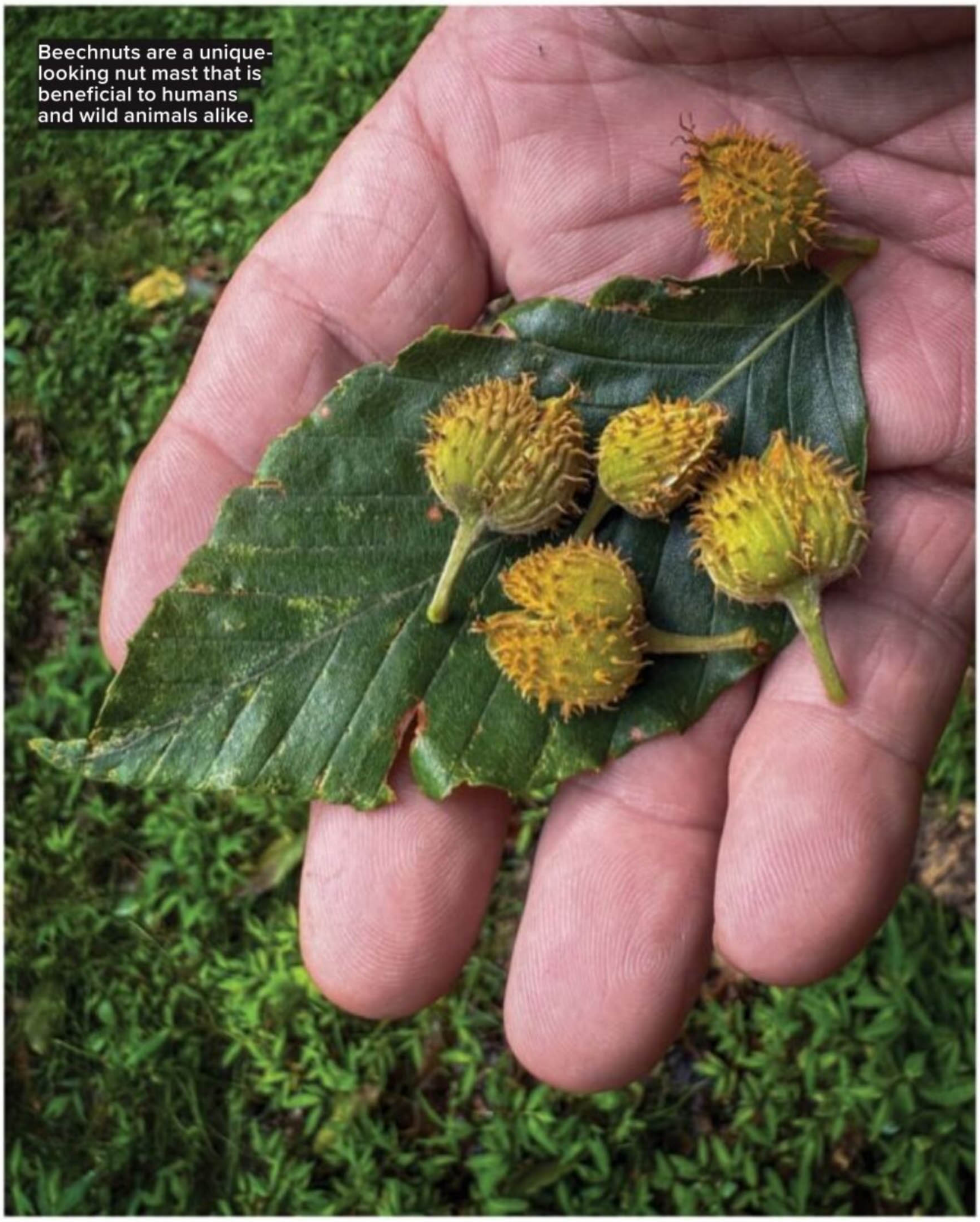
VIRGINIA PINE & WHITE PINE

If you're after a field source of vitamin C, look no further than pine. I prefer the flavor of white pine (Pinus strobus), but Virginia pine (Pinus virginiana) is far more common where I roam. Tea made from green needles, chopped up and steeped, not boiled, can provide a good dose of vitamin C and a warm morale boost on a cold morning.

MULBERRY

Come early summer, the red mulberry tree (Morus rubra) offers one of the tastiest wild fruits you'll find


Willow trees' cambium bark, below the outer layer, is great medicine.


Beechnuts are a unique-looking nut mast that is beneficial to humans and wild animals alike.

Sweetgum leaves are nature's little air freshener.

in the woods. The berries, ranging from deep red to nearly black when ripe, are sweet, juicy and packed with vitamins. Other varieties are nearly solid white. They grow on short trees or tall shrubs, often near forest edges or old homesteads. The leaves are also edible when young and tender, though they're more often used for tea or livestock feed. Just be prepared to share with birds, as they often get to the berries first.

When the usual greens and berries go into seasonal hiding, trees stand tall as a year-round resource. From fruits and nuts to medicine and calories, they offer more than shelter or firewood. They can mean the difference between comfort and misery, or even survival and failure.

But the wild woods demand respect. Learn slowly. Taste in moderation. And always leave a tree in better shape than you found it.

MUST-HAVE RESOURCE

If you're serious about wild food and medicine, *Sam Thayer's Field Guide to Edible Wild Plants of Eastern & Central North America* deserves a spot in your pack or glove box. This isn't just another plant book; it's the most comprehensive regional guide ever written, covering 700 edible species with full-color photos, range maps and clear descriptions.

What makes it stand out? Thayer's guide uses everyday language along with botanical names, making it accessible to both beginners and seasoned foragers. It also introduces a unique identification system that works beautifully on its own or alongside mobile ID apps for added confidence in the field.

From nuts and berries to shoots and tree bark, it's the perfect companion for anyone wanting to take their wild food knowledge deeper, safely and confidently.

CHAPTER 2

HOMESTEADING

SELF-RELIANCE CAN BE A LOT OF WORK, BUT THE REWARDS MAKE IT WORTH ALL THE EFFORT.

SELF-RELI

THESE SKILLS ARE USEFUL IN GOOD TIMES AS WELL AS WHEN THINGS GO AWRY!

Some projects allow you to be creative and even a little artistic.

ANCE 101

You can only rely upon yourself

BY DANA BENNER

I LEARNED AT A VERY EARLY AGE TO BE SELF-RELIANT, BUT I NEVER THOUGHT THAT THIS SKILL WOULD BE WHAT I NEEDED TO GET ME AND MY FAMILY, AND FRIENDS, THROUGH THE TURMOIL THAT FACES US NOW.

The scenario from the books and movie franchise *The Hunger Games* comes to mind. The theme is that the rich and powerful (the top 1%) control everything and everyone else needs to fend for themselves. Sounds familiar, right?

WHAT IS SELF-RELIANCE?

Self-reliance is not a thing; it's a mindset. It is about relying upon your own abilities as much as possible. It is not about waiting for the other guy to fix a problem. It is about believing in yourself, figuring out what to do and then doing it.

Self-reliance means setting yourself up to not only survive, but to thrive. You achieve this by living by your own rules, by your own plans and by your own skills. It means learning to make do with you can produce, without the aid of the government. Too often we rely upon the government to do the right thing, to make things right. Whether it is natural disasters or the economy, we sit back and wait for things to happen. Guess what? They don't happen.

To be self-reliant, you need to:

1. Have a plan (or two).
2. Know your own limitations and strengths.
3. Seek the help of others who know more.

The author building a chair from repurposed material.

What follows are some ideas that will help you make it through this uncertainty. You will see how all three tend to overlap.

MAKE A PLAN

Anyone who knows me knows that I always have a plan. Having a plan, and sticking to it, is very important. It is very easy to deviate, but resist the urge. There will be many temptations and promises that will try to get you off track. If it seems too good to be true, it usually is; stick to the plan.

Without a plan, you are sunk, and the lifeboats are disappearing by the moment. However, don't be afraid to adjust the plan as circumstances change. There's nothing out there that's guaranteed, so you need to be able to roll with the punches. Part of the plan involves answering two questions:

1) Where will your money come from?
2) How will you feed your family?

All of this can be overwhelming unless you have a plan.

Sadly, we live in a world where you need money to get by. There are federal and state taxes, different types of insurances and food to purchase, as most of us can't provide all our own food. You may say, "I'm not worried.

Even many urban and suburban areas allow you to raise a few chickens.

I have a job," but what if suddenly you didn't? What would you do?

Save whatever you can. This could be cutting down on those things you want, but don't really need. Try combining multiple small trips into one large trip to save on fuel and stocking up on things when they are cheap or on sale.

If you have the cash, think about investing in gold and silver. Purchase hard examples of these items. Don't purchase certificates that say you have it. I have been saving U.S. coins (dimes, quarters, half dollars and dollars) minted prior to 1964 for years. These coins have silver content. You probably get them in change every now and again. I look through my change every day, which makes my wife think I am a little neurotic, but every penny counts.

Sell any items that you are not using. Use hand tools instead of electric tools if possible. Save money by unplugging devices when not in use. Cancel unused apps and services you don't need. Repair your clothes instead of throwing them away.

SKILLS AND LIMITATIONS

Earn money from your skills. Are you good at woodworking? How about mechanics, plumbing or even knitting? These side hustles may get you through—and besides, doing these things can be rewarding. This is where knowing your limitations comes into play. In other words, don't say you can do

SELF-RELIANCE IN TODAY'S WORLD

No matter where you live, you can be self-reliant. Whether in a city, in the country or somewhere in between, here a few steps.

- **Monitor your finances**
  Take an active role in where your money goes. Don't leave the decision-making to others.
- **Trust, but verify**
  Not everyone has your best interests at heart. Keep your circle of friends small.
- **Learn as many skills as possible**
  Whether it is carpentry, mechanics, weaving or cooking, the more you know, the better off you will be.
- **Food security**
  Have a garden, raise livestock (where possible), hunt and fish. If nothing else, purchase your food from local farms.
- **Work with others**
  Join a co-op or other group. Donate your skills to others and, in return, take advantage of the skills they may be able to offer.

The author's hunting group at a rented cabin.

something if you can't.

I had a neighbor who raised chickens. One day, he asked me if I knew how to sharpen knives, to which I said I did. He then asked me if I would sharpen some knives for him and he added he would pay me to do it. I told him I would be happy to sharpen his knives, and being my neighbor, I wouldn't charge him. The next thing I knew he showed up with a large box full of knives. When I returned the sharpened knives, the farmer presented me with six or seven fully processed whole chickens as payment. Those chickens ended up in my freezer, alongside pheasants, quail and turkey.

Bartering for goods and services is a good way to make your money go further. It also may help the other guy as much as it does you. Maybe offer your skills at a nearby farm in exchange for some of their produce.

One time I worked a few days on a lobster boat. The captain couldn't pay me, but he needed help. I worked in exchange for part of the day's catch. It was hard work, but at the end of it all I walked away with a few lobsters and all of the crab that we caught. I was happy with the experience and with the catch, which was promptly cooked and put in the freezer.

Work with what the land will give you. When and where legal, I hunt and fish to put food on the table and in the freezer. I also have a garden and forage in the foods and fields near my home. With the cost of food today, you need to take advantage

FEW, IF ANY, PEOPLE CAN PROVIDE FOR EVERY SINGLE ONE OF THEIR NEEDS. BUT WE CAN OFTEN DO FAR MORE THAN WE REALIZE.

of every opportunity.

I just bought a piece of property where I plan to build my new home. Where others see just woods, I see opportunity. Walking the land, I saw deer yards and other signs of game. I found patches of fiddleheads and berries. I found all of the things I needed to live a self-reliant life.

I also found a use for the wood I cleared from the property (just enough for the house). I began making things to use around the home, and better yet, things other people were willing to purchase. With proper care and respect, and the skill of my own two hands, this land will produce what I need for many years to come. It all can work if you just believe in yourself and you think outside the box that modern society has put us all in.

SEEK HELP

Work with others to secure your food. I have friends who, like me, have gardens, forage, hunt and fish. We work together and share equally in the bounty, or the bust. Some years are better than others, but we are working toward a common goal.

The world is changing by the minute, and not always for the better. Tariffs, taxes, the cost of food and a host of other things are working against all of us. This means that we need to rely upon ourselves, to be self-reliant, if we intend to make it through. The word "can't" is not in my vocabulary, and it shouldn't be in yours. We all can either put our heads in the sand, look the other way and hope it all blows over, or we can take matters in our own hands. This is what self-reliance is all about.

Dana Benner has been writing about the outdoors, self-reliance and self-sufficiency for over 35 years, with his written work appearing in numerous publications. He also hosts and produces related programs on HCTV in Hudson, New Hampshire.

Learn how to process your harvested meat and make use of every scrap.

FALL GARDENING

A season of renewal and bounty

BY CECI HAMPSON-ELLIS

EVEN THOUGH HARVEST BASKETS ARE FULL AND SUMMER'S GARDEN IS WINDING DOWN, FOR THE SAVVY HOMESTEADER, FALL IS THE TIME TO DIG IN—LITERALLY.

With cooler weather, fewer pests and predictable rainfall in many areas, fall gardening sets the stage for a productive harvest now and an even better start to spring. In fact, fall is one of the

AUTUMN DOESN'T NECESSARILY HAVE TO MEAN THE END OF THE GROWING SEASON!

There are a number of plants you can grow as the weather begins to cool down.

most productive, and overlooked, times of year to grow fresh food.

Whether you're tending a large rural plot or managing raised beds in a suburban backyard, fall gardening isn't just a way to extend the season. It's a strategic move to get more from your land, stretch your food budget and boost your resilience. Let's walk through what you can grow, when and how to plant, and why gardening through the fall is worth the effort.

PREPARE YOUR BEDS

Fall gardening starts with the soil. Chances are your summer crops have taken a toll on the nutrients. Before planting anything new, it's essential to clean up what's left from your summer garden. Remove any diseased or pest-ridden plants entirely and compost healthy remains. Pull out spent annuals, clip back perennials, and collect fallen fruit that could attract rodents or insects.

If you've battled poor yields or persistent pests, consider a soil test. Your county extension office can usually help with this for a minimal fee. Amending in fall gives your soil time to rest, recharge and absorb nutrients before it freezes.

Once cleaned up, prep your soil. In most areas, fall is an excellent time to add compost, leaf mold or well-rotted manure. These amendments will break down slowly over the winter, enriching your soil and improving its structure. If your garden soil is compacted, now is also a good time to broadfork or lightly till, just enough to aerate without disturbing the beneficial microbes.

If you've had disease problems, rotate your

Root crops will be just about ready to harvest as the days get shorter.

crops. Don't plant members of the same family in the same spot two seasons in a row. This helps break pest and disease cycles.

Keep in mind, fall crops hate soggy soil. If you're in a rainy area, consider planting in raised beds or mounded rows.

CHOOSING WHAT TO GROW

Your USDA Hardiness Zone plays a crucial role in deciding what to plant and when. For instance, gardeners in Zone 3 face a much shorter fall growing window than those in Zone 9. In colder zones, it's smart to focus on quick-maturing, cold-hardy crops that can be harvested before frost arrives, while warmer zones offer a longer timeline and a wider variety of options.

To plan effectively, use your area's average first frost date as a benchmark. Count backward from that date according to a vegetable's days to maturity. When possible, select varieties labeled early, cold-hardy or frost-tolerant to increase your chances of success.

Many cold-season crops actually thrive in cooler temperatures. Some, like kale and Brussels sprouts, even become sweeter after a frost. Leafy greens such as spinach, kale, collards, Swiss chard, mustard greens and arugula grow quickly and often tolerate light frosts. Root vegetables like carrots, beets, radishes, turnips and parsnips do well when sown directly into well-prepared soil, and many can be stored in the ground even after a frost. Brassicas, including broccoli, cauliflower, cabbage and Brussels sprouts, prefer to be transplanted from indoor starts or nursery-bought seedlings for the best results.

You can use a hoop house or containers to retain heat and extend the growing season.

When sourcing seeds, look for reputable suppliers who specialize in varieties suited to your region and climate. Local seed exchanges, extension offices and trusted online heirloom seed companies can be great resources. Buying seeds that are adapted to your particular growing zone not only improves germination rates but also helps ensure your fall garden will thrive through cooler temperatures and shorter days.

FAST-GROWING FALL CROPS

If you're within 60 days of your first frost, there's still time in many zones to sneak in a quick harvest. Some radishes mature in just three to four weeks. Loose-leaf and butterhead lettuces grow fast and can be harvested young for tender greens. Spinach is tougher than it looks—it often survives light frosts and may even overwinter with a bit of cover. Turnips are

Raised beds are an excellent way to grow crops all year long.

a cold-hardy standby in Zones 5 and up, offering both greens and roots for the table.

Plant in well-drained soil and water consistently to support rapid growth. If temperatures linger high into early fall, use shade cloth to keep young plants from bolting. Bolting is sometimes called going to seed. It begins with a small flowering bud in the center of the plant or stem, which grows very tall very quickly. This is common in heat-sensitive vegetables like broccoli, cauliflower, lettuce, bok choy and other leafy greens.

DON'T FORGET PERENNIALS

Fall is also an ideal time to plant perennial vegetables, fruits and herbs. The cooler temperatures and more predictable moisture help new plantings focus on root development, which sets the stage for vigorous spring growth. Asparagus crowns and rhubarb roots can be tucked into amended soil now, along with fruit trees, berry canes like raspberries and blackberries, and hardy herbs such as chives, thyme and mint. With minimal attention, they'll quietly establish themselves through winter and reward you in the growing seasons ahead.

PLANT FOR SPRING

Some of the most valuable fall gardening tasks don't pay off right away; they are investments for spring. Garlic is a classic example. Plant individual cloves in late September through October, about four to six weeks before the ground freezes. Be sure to mulch well. The bulbs will establish roots in the fall and burst forth as soon as the soil warms in spring.

Overwintering onions is another smart move. Whether you're starting from sets or seed, they need to go in the ground early in the fall to develop before the cold sets in. Come spring, they'll already be ahead of the game.

Fall is also the time to think beyond vegetables. Consider sowing cover crops like clover, winter rye or Austrian winter peas. These living mulches suppress weeds, improve soil structure and return vital nutrients, especially nitrogen, back into the ground. Come spring, you can cut and turn them under for a rich, fertile start to the season.

WATERING AND MAINTENANCE

Fall brings cooler temperatures and more consistent rainfall in many regions, but your garden still needs attention. With less evaporation, plants may not need as much water, but don't assume they're fine without checking. Stick your finger into

FALL GARDEN PROJECTS

If your harvest is slowing down and you're wondering what to do with your free afternoons, here are a few worthwhile autumn tasks:

- **Build Raised Beds** Cooler weather is ideal for outdoor construction projects. Plus, the beds will be ready to go come spring.
- **Plan Your Crop Rotation** Use a garden journal to track what you grew where. This helps improve yield and reduce pest issues.
- **Start a Compost Pile** Fall leaves are a gold mine for compost. Mix them with kitchen scraps and garden waste.
- **Install Drip Irrigation** Lay out your lines now, and you'll save time and water next season.
- **Set Up a Rainwater Collection System** Capture the autumn rains in barrels for spring irrigation.

the soil; if the top inch is dry, it's time to water. Aim to keep the soil evenly moist but not soggy, and try to water in the morning. This gives foliage time to dry before evening, helping to prevent mold and mildew.

Pest pressure tends to ease off in fall, but certain bugs are still active and can quickly take out your crops if ignored. Aphids, flea beetles, cabbage worms and slugs are especially fond of cool-season vegetables. Keep an eye on your brassicas—use row covers early on to keep moths from laying eggs. Pull mulch back from plant stems to discourage slugs, and check under leaves and along soil lines for pests. Hand-picking remains one of the most effective methods. If things get out of hand, use an organic spray like neem oil or insecticidal soap.

Your fall crops don't need a heavy feeding schedule. If you've amended with compost, you may not need to fertilize at all. A light application of balanced organic fertilizer can support leafy greens or root crops that are working hard to bulk up before frost.

As the season winds down, take a few extra minutes to clean up. Wash and sanitize your tools, especially pruners, shears and anything that came in contact with diseased plants. Wipe down cages, stakes and trellises with a diluted bleach solution or white vinegar to prevent disease from overwintering. Dry everything thoroughly before storing. A clean tool shed now means fewer problems—and faster setup—come spring.

A FINAL WORD

The beauty of fall gardening is that it invites you to slow down, take stock and prepare. It's also about feeding your family, stewarding your land and creating a buffer against uncertainty. Don't be discouraged if your fall crop isn't as abundant as summer's was. Even a modest harvest of greens or root crops can take the edge off winter grocery bills and give you a bit more independence. Every radish pulled from a frosty bed and every clove of garlic planted in chilly soil is a quiet act of independence.

So don't hang up your gloves just yet. Fall is calling. Dig in, get those seeds in the ground, mulch those beds and take pride in working with the rhythm of the seasons. Your future self—and your pantry—will thank you.

THE PRODUCE HARVESTED IN THE FALL JUST MIGHT BE THE MOST COLORFUL YOU'LL HAVE!

Gourds are a traditional fall harvest.

Ceci Hampson-Ellis lives in Phoenix with her husband and cats. She volunteers her spare time at Liberty Wildlife, helping to care for injured and orphaned wildlife while educating the public on why healthy wildlife is important.

PROTECTING THE WOODPILE

Log-ical information for successful wood storage

BY ANGELINE HAWKES

Heating your home with wood requires advance planning and preparation.

LOCATED IN ISRAEL, THE GESHER BENOT YA'AQOV SITE HAS YIELDED ARCHAEOLOGICAL EVIDENCE OF MAN USING WOOD AND FIRE TO COOK FISH AS FAR BACK AS 780,000 YEARS AGO. SOME ANTHROPOLOGISTS SPECULATE MANKIND WAS WARMING THEMSELVES BY FIRES 2 MILLION YEARS AGO.

Wood was and is a precious resource that can mean the difference between life and death, whether it's used for cooking or warmth. There's an old Scandinavian saying that goes something like, "You can tell a lot about a man by his woodpile." That can translate into everything from style to preparedness. Logs deserve more respect than just being tossed into a haphazard pile and left to the elements. Protecting the woodpile is essential for ensuring the wood will be available when the need arises.

ROTTING WOOD

Rotting wood has always been a problem for man and is documented by the Bible and other early writings. Just like leaving a banana outside on the porch will ultimately result in a stinky pile of rotted fruit, cut, untreated wood left in the elements will eventually rot. Depending on the surrounding environment, damp wood can rot within a couple of months to years. Wet climates will cause wood to rot faster. Wetness, mixed with hot temperatures, really speeds up decay. Some woods, like oak and other hard woods, resist decay for longer than softer woods, such as pine, but all wood will rot eventually if moisture is present. Rotting in wood is caused by fungi that feed on lignin and cellulose in wood. The fungi responsible for wood rot thrive in temperatures of 65 to 95 F. Most fungi will not be killed by freezing temperatures, but rather go dormant, waiting for optimum conditions to restart their feeding process. Typically, there are two types of rot: brown and white. Brown rot is caused by fungi attacking cellulose in the wood, causing the wood fibers to darken, shrink and crumble into powder. In white rot, fungi consume all of the wood, causing the wood to grow whiter and break down into a fibrous mush.

PERMANENT STRUCTURES

Structures such as a lean-to, shed, storage building, covered rack, an unheated garage or custom wood-storage structure should be built to provide protection from moisture and to allow for maximum ventilation. All storage should protect the woodpile from moisture (above and below). Wood should be stored about 12 inches off

DON'T STORE WOOD RIGHT UP AGAINST THE HOUSE TO AVOID PESTS INFESTING YOUR HOME!

The wood should be protected from the rain, but still allow for plenty of air circulation.

the ground. Use pallets (which are also wood and face the same rot issues as logs), metal sheets, paving stones, gravel or rocks, a concrete foundation, bricks, or metal racks to create a barrier between the ground and logs. Tarps placed beneath the pile are good as long as they're able to drain. Pooled water caught by waterproof tarps will allow wood to soak and hasten rot. Drainage is an important consideration for whatever you choose to place between the logs and the ground. Lean-to structures may be built from metal, pallet wood, treated wood, PVC pipes or a combination of these materials. If you heat your home solely with wood, invest in a permanent structure, such as a poured concrete foundation with posts and a roof, if not an entirely enclosed shed-type of structure.

LESS PERMANENT COVERINGS

A covered rack or makeshift lean-to can be achieved by placing two end pieces with a method of raising the wood from the ground in between them, and covering the pile from above. For the end pieces, use metal racks, wood, pallets, PVC piping or other materials. Think of a canopy bed: the head and footboards are the ends, the mattress is

THE BEST WOODS TO BURN INDOORS

Hardwoods are the best woods to burn in a woodstove or fireplace. What are the differences between softwood and hardwood? Softwoods come from coniferous trees that remain green year-round, such as pine, and are lighter woods that are softer in grain and density. Softwoods are used in construction and paper production. Hardwoods come from deciduous trees that drop their leaves every year. Hardwoods are strong and dense, which allows them to burn at a consistent temperature for longer. Hardwoods produce less creosote buildup within chimneys, so they require less cleaning. Woods recommended for indoor burning are: apple (bonus: nice fragrance), ash (bonus: easy to split), birch, cherry (bonus: nice aroma), hickory (bonus: clean, long burn), maple and oak (slow burning with high heat).

Try to keep your processing area close to your wood storage to eliminate extra work transporting it.

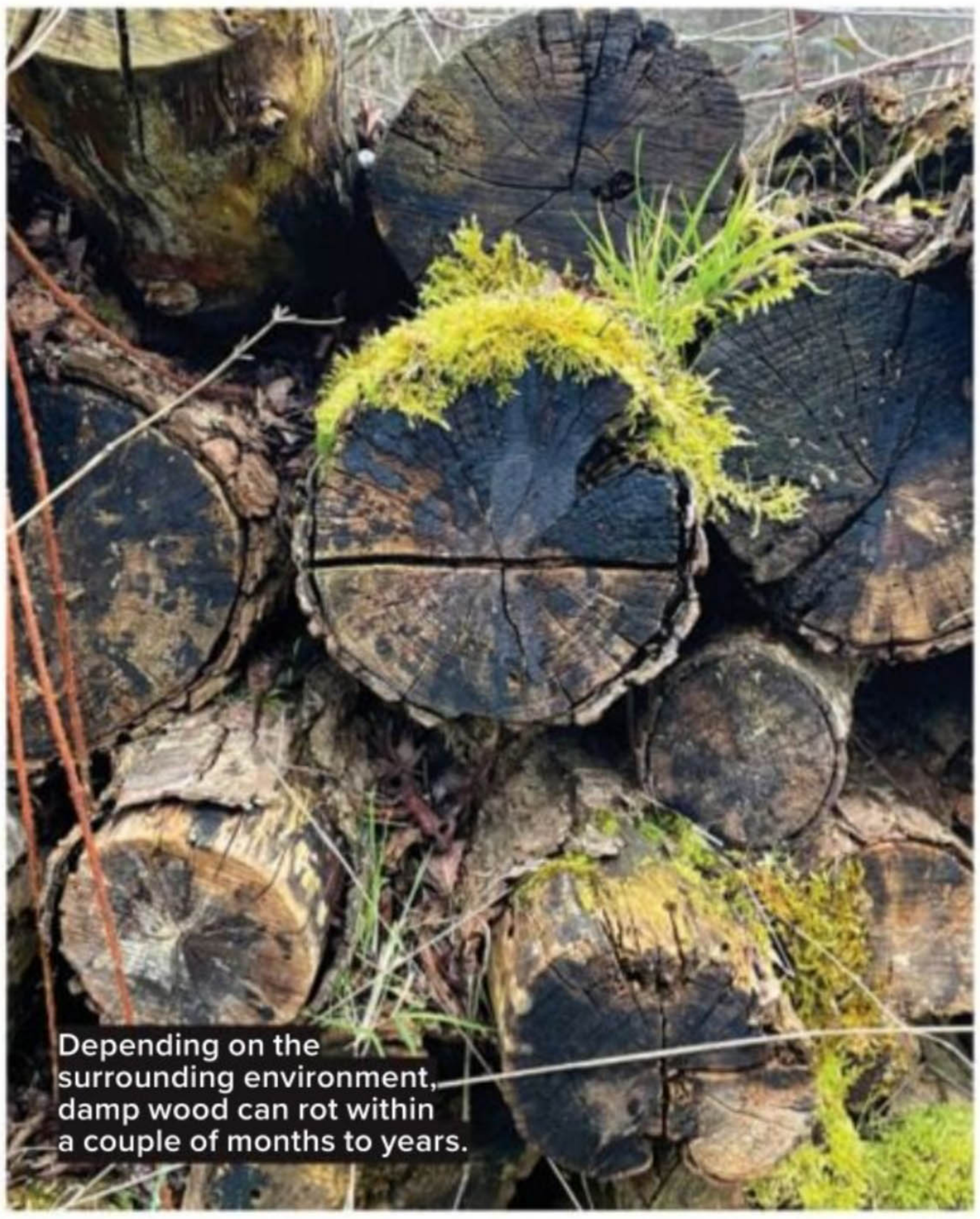
the foundation to lift the wood from the ground, and the canopy is the covering from the top to protect the woodpile. Tarps, garden and other thick plastics such as poly-sheeting (6 mm to 14 mm thick), or even a tent can be fixed to the ends and stretched over the woodpile to shield the wood from rain and snow.

CORRECT STACKING

Don't stack the wood any higher than can be comfortably reached, which is usually about 6 feet high. To achieve proper ventilation, an old farmer's bit of advice is to stack logs far enough apart that a mouse can run between them, but close enough together that a cat can't chase the mouse. How you stack the wood is usually a personal preference. There are those who choose to stack logs in rectangular stacks, or row upon row all facing the same direction, while some people do vertical/horizontal layers, switching it up as the stack goes up from the ground. Some people place posts, planks or boards between each log row/layer. Choices in stacking have a lot to do with how the wood is cut (chunks, logs, squared) and personal preferences.

POTENTIAL DANGERS

Once you've protected your wood from moisture, allowed for proper ventilation, and ensured the pile is securely stacked without the risk of toppling over (not too loose or high), there are other issues to consider. Insects, rodents, reptiles and even birds may see your woodpile as a home. Placing the woodpile too close to your house may encourage those potential woodpile residents to seek shelter inside with you. After all, it's going to be warm in there, with all the wood stacked in the pile.


Depending on the surrounding environment, damp wood can rot within a couple of months to years.

PESTS

The old "snake in the woodpile" saying means more than just questioning one's lineage or the character of a "friend." Remembering this phrase will help you be cautious whenever you're retrieving wood. Snakes, such as copperheads, love the dampness clinging to stacked, sheltered logs. Their coloring allows them to slink between logs undetected—until someone seizes upon the wrong log! Likewise, snakes like to hide beneath logs, which is an important reason to keep logs off the ground. Birds, chipmunks, feral cats, frogs, hedgehogs, mice, possums, rats, skunks, squirrels, toads and even an occasional armadillo can be found nesting or hanging out in woodpiles. Insects like to use logs for shelter, laying eggs, or a tasty meal (for wood-boring insects such as beetles and termites). Watch for ants, centipedes, millipedes, spiders, termites and wasps. These unwanted visitors are a reason to keep wood storage about 30 to 50 feet from your house. Any farther and it's an inconvenience to haul the wood to the house; any closer and woodpile visitors might start considering a move-in with you.

FIRE RISKS

Woodpiles placed close to your house or other structures also pose fire risks. Decomposition of wood and moisture, especially during hot, dry months, can generate heat, causing spontaneous ignition. Woodpiles are risky during wind-driven fires, such as wildfires or a neighbor's out-of-control burning trash pile. So, in addition to pest and unwanted animal control, heightened fire risk is a good reason to place a woodpile storage area 30 to 50 feet away from structures.

Angeline Hawkes writes for *Backwoods Survival Guide*, *Backwoods Home Magazine*, *Prepper Survival Guide*, *Self Reliance Magazine* and others. Visit her YouTube channel, Canterbury Trails Farm, at youtube.com/c/CanterburyTrailsFarm.

DEHYDRATED. NOW WHAT?

How to reconstitute and rehydrate foods

BY ANGELINE HAWKES

Dehydrating food is great for storage, but that's only half of the equation. You also have to know how to use it properly later.

YOU WATCHED THE YOUTUBE AND TIKTOK VIDEOS ON DEHYDRATING FRUITS AND VEGETABLES. YOU READ TONS OF ARTICLES IN PREPPING AND COOKING MAGAZINES ON THE PROCESS AND STORAGE OF SAID DRIED FOODS. YOU BOUGHT A FOOD DEHYDRATOR, PREPPED AND DRIED, AND FILLED JARS.

Your pantry shelves are full of lovely, dehydrated foods just waiting to be incorporated into meals. But how do you use these jars of desiccated goodness? Dehydrated foods, such as fruits and vegetables, are perfect in baked goods, casseroles, soups and stews. They can be added to butter, cheese, and cream dips and sauces. In short, bake or cook with them just as you would fresh foods once you reconstitute them. But don't just stop at dehydrated slices or cubes: Try powdered dehydrated foods as well. Both forms have awesome roles to play as meal ingredients.

DEHYDRATION IN A NUTSHELL

Fruits, meats and vegetables can be dehydrated by sun-drying, air-drying, drying in a food dehydrator or drying in a warm oven with the door left ajar. Foods can be used in different ways, depending on the length of time they were dried. Foods meant for long-term storage or to be made into powder should be completely dehydrated to ensure there is no moisture left to encourage the growth of mold or bacteria. To powder dehydrated foods, pulverize them in a blender or coffee grinder until they are uniformly powdered. Foods meant to be eaten as jerky or dried snacks (like fruit leathers) will have a tad more moisture in them than foods meant to be stored or powdered.

When dehydrating and rehydrating foods, as a general rule these are the yields:

- 1 cup fresh food yields about ½ cup dehydrated food
- 1 cup dehydrated food yields about 2 to 3 tablespoons powdered food
- 1 cup fresh food yields about 1 tablespoon powdered food

IN MANY CASES, YOU CAN JUST LET THE FOOD SOAK FOR A WHILE TO REHYDRATE!

WHAT'S THE DIFFERENCE?

The terms rehydrate, reconstitute and refresh are often used interchangeably. There is a slight variation in the definitions. All of the words refer to adding water back to dried foods that have had water removed, and most people aren't going to bicker over the use of one word over the other. Rehydrate, technically, means water is added to food that still has some moisture but needs water to bring it back to an original state (think: orange

Fill a bowl with 2 cups of liquid per 1 cup dried food and allow the food to soak and absorb the liquid for 30 minutes to about an hour.

juice concentrate). Reconstitute, technically, means to add water to a food which is totally dehydrated (de-watered), such as dried milk powder or freeze-dried foods. The term "refresh" is often used in place of rehydrate or reconstitute and means the same thing: adding water to a dried food to return it to an original state, or close to an original state.

WAYS TO REFRESH DEHYDRATED FOODS

Similar to cooking with rice or oatmeal, use the 2:1 ratio for refreshing food: 2 cups of liquid per 1 cup of dried fruit, vegetable or meat. Water, broth, juice, milk or wine may be used. Obviously, foods that have been dehydrated and then refreshed are never going to be identical to crisp, fresh vegetables or fruits. You can't eat refreshed carrots like you would a fresh, crunchy carrot stick dipped in ranch dip. They do bake or cook the same, however. Some commercially freeze-dried foods may require longer soaking times. Any dried food taking over an hour to soften should be soaked in the refrigerator to prevent the growth of bacteria.

There are three basic methods for refreshing dried foods and one method for powdered foods.

Dehydrated foods are popular for camping as they're light and don't take up much space.

ADDING BOILING WATER TO DEHYDRATED FOOD CAN SPEED UP THE REFRESHING PROCESS, GETTING FOOD ON THE TABLE QUICKER.

✖ **Simple Soaking** The first method requires no babysitting. Fill a bowl with 2 cups of liquid per 1 cup of dried food and allow the food to soak and absorb the liquid for 30 minutes to about an hour. Vegetables such as greens (spinach, kale) may take even less time. Consult your state's USDA extension website if you desire exact amounts of liquid and exact time estimates (extension.org/find-cooperative-extension-in-your-state/). Test the softness of the food by pressing on it. The drier and thicker the food was to start with, the longer it usually takes to absorb the liquid. Drain any remaining liquid from the food and bake or cook with it as usual. This is the best method to use if you wish to use, for example, refreshed fruit in a fruit salad to be refrigerated or served at room temperature with no cooking.

✖ **Pouring Boiling Water Over Food, Then Soaking** This method is identical to the simple soaking method, except that the liquid is boiling when added. The boiling liquid speeds up the rehydrating of the food and also aids in killing bacteria if any is present. Refreshing with boiling water should be quicker than the simple soaking method.

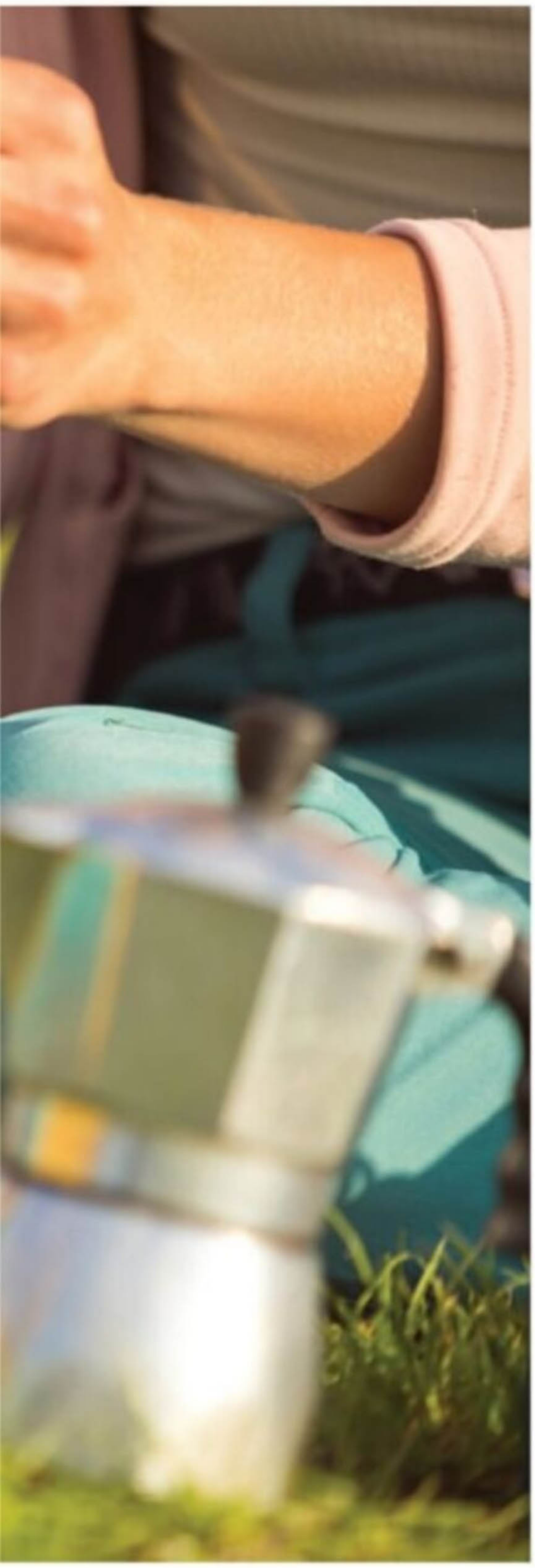
✖ **Simmering**
Place 2 cups of liquid per 1 cup of dried food in a pan and simmer over low heat for 10 to 15 minutes, stirring frequently, until the food is soft. Drain any remaining liquid and proceed with your recipe.

✖ **Rehydrating Powders**
Reconstituting dehydrated powders is not an exact science. Add enough water, a teaspoon or tablespoon at a time, until the desired consistency is reached (a paste is generally handy for use in most dishes).

Take care when pouring boiling water into your dehydrated food, or you might need to visit the burn treatment article on page 14 in this issue.

The exception to these methods is if you are using dehydrated foods in a soup or stew. Because so much liquid is used in the making of these dishes, there is no need to refresh the dried foods first. Just add the dried foods to the soup recipe and cook as instructed. The dried food will refresh during the cooking process.

Save the drained, flavorful liquid to be added back into the recipe if liquid is called for, or save it in an airtight jar in the refrigerator to include in a future recipe. This liquid not only adds flavor to other recipes, but it also contains minerals and vitamins.



USING RECONSTITUTED FOODS

Dried foods that have been reconstituted may be used in any recipe in place of fresh foods with the awareness that the fruit or vegetable will not have a crispness to it. (But then again, most cooked or baked recipes will not result in a crisp texture.) One of the advantages of baking or cooking with reconstituted foods is that the cooking time is decreased because the fruit or vegetable (or meat) is already softened during refreshing. You may need to shorten the cooking time on your recipes. Keep a close eye on your dish.

Powders are often overlooked and are very versatile. Powders may be added, without any refreshing and left in powdered form, to drinks, teas, baked goods, seasonings, frosting, pies, breads, granola, broths, soups, casseroles, butter, cream cheese, sour cream, and other dips and sauces. Powdered apples and pears make excellent applesauce and are portable in a zip-close plastic bag for camping or hiking foods. Some cooks like to use powders to add color to dishes as well. For example, try a few pinches of beet powder to add a purplish-red color to desserts. Vegetable and fruit powders may be reconstituted to paste form to use as home-crafted baby foods, but to ensure all bacteria has been destroyed, add a little more water than necessary and bring the paste to a quick boil (some water will evaporate as it boils). Allow the food to cool before serving it to a baby.

USING PUMPKIN POWDER FOR PUMPKIN PIE

The typical sugar pumpkin (pie pumpkin) weighs approximately 1 to 6 pounds. A 2- to 3-pound sugar pumpkin will yield about 2 ¼ cups puree (once baked and processed in the blender). The same size pumpkin will result in about 1 cup dried pumpkin, or about ½ cup of powder. An easy way to dehydrate pumpkin is to spread the puree on trays and dehydrate until crisp, breaking the finished product into pieces. Blend until powdered in a blender or coffee grinder. Keep a few jars of pumpkin powder in your pantry for quick breads and pies.

To make a pumpkin pie from pumpkin powder, mix the following in a bowl:

- ½ cup pumpkin powder
- 2 cups hot water

Add the water a ¼ cup at a time while stirring. Aim for a paste form. You may not need to use all of the water.

Stir into the mixture:

- ½ teaspoon each of ground cinnamon, ground cloves, ground ginger, ground nutmeg
- ⅛ teaspoon table salt
- ¾ cup sugar

Let the mixture rest for about 30 minutes before use. This yields about the same as a 15-ounce can of store-bought pumpkin pie filling.

Preheat the oven to 425 F. Pour the mixture into an unbaked 9-inch pie crust. Bake for 15 minutes and then reduce the temperature to 350 F. Cover the pie crust edges with foil or a silicone crust protector and bake for 45 minutes or until firm in the center.

What they lack in storage space, they make up with low utility bills and little maintenance.

START SMALL

A great way to start your new life.

BY RYAN LEE PRICE

THE DIFFICULTIES OF HOMESTEADING THE PERFECT PIECE OF LAND–CULTIVATING THE GROUND, CARING FOR ANY ANIMALS AND MORE–CAN BE COMPOUNDED IF YOU HAVE TO DEAL WITH AN OLD FARMHOUSE,TOO. A RELATIVELY NEW MOVEMENT CAN BE A SOLUTION TO FREEING UP SOME TIME AND ENERGY.

Simultaneously getting a working homestead up off its feet while renovating an old house so your family has a place to sleep at night can be a huge challenge. Instead, consider building or buying a tiny house that has been all the rage these past dozen years or so. You can live in it quite comfortably while renovations are taking place in the main house, and afterward it can be used as a guest house or even a rental property for some extra income.

TINY-HOUSE HISTORY

Though tiny houses were a mainstay for pioneers, fur trappers and early settlers in the American frontier, they weren't called "tiny houses," but instead just simple cabins built with the available materials and a budget of zero dollars. It wasn't until 1854, when Henry David Thoreau spent two years, two months and two days in a 150-square-foot home near Walden Pond in Massachusetts, that people were first subjected to the merits of modest living, with Thoreau writing in his journal on July 22, 1857: "The rule is to carry as little as possible."

The layouts and designs of these homes take advantage of every inch of space.

Over 100 years later, innovative architects Lloyd Kahn and Bob Easton wrote their book *Shelter* in 1973, extolling the virtues of small-house designs from around the world, from Bedouin tents to southeast Asian tin-and-thatch homes. In 1987, Lester Walker penned *Tiny Houses: or How to Get Away From It All*, showing prefab tiny houses, giving a look into the burgeoning movement and providing resources for the new industry. Since then, many cities have relaxed permits and zoning codes when it comes to building a tiny house, and more companies have begun building them for customers. The first to do so was Jay Shafer and his Tumbleweed Tiny House Company in Sonoma, California.

MOVING FROM A FULL-SIZE HOME TO ONE OF THESE IS DEFINITELY AN ADJUSTMENT FOR EVERYONE, AS THERE'S VERY LITTLE PRIVACY.

The average home size in the late 1950s was around 1,400 square feet, and since has nearly doubled, as more families are attracted to larger rooms and special purpose spaces, such as media rooms, home gyms, bonus/playrooms and home offices.

The interest in downsizing hit a fever pitch in 2008 during the debilitating subprime mortgage crisis and the massive bubble burst that forced many people to reconsider downsizing and living in more modest-sized homes. The tiny-house movement spiked with TV shows, blogs, magazine articles and special interest groups forming a community around the concept. Tiny-house "hotels" sprang up, and

Airbnb listings for tiny houses soared.

Today, a tiny home is seen as a viable residential option for people who are disenchanted with the idea that bigger is better.

IS A TINY HOUSE RIGHT FOR YOU?

The concept of a tiny house at its core definition is to replace your primary residence with a house a fraction of its size, but in this case, it is to act as a temporary shelter until the main house is renovated. Therefore, a tiny-house design would make for a wonderfully inexpensive alternative, given its efficiencies, minimalism and overall impact on your property and budget. Not only can the mobile version be towed to anywhere there's a passable trail, but they can be moved when needed.

Although there are many benefits to living a tiny-house lifestyle, there can also be surprises and challenges that may be magnified in such a small space. Let's run through some pros and cons.

PROS

- **Environmentally Friendly** Tiny houses have lower utility needs than regular houses, as they use less electricity, water, and gas, and they produce less waste. If you want to live off-grid, it is

SOLAR PANELS ARE A GREAT ADDITION TO THE ROOF OF THESE LITTLE RESIDENCES!

Some tiny homes are kept on a trailer base so they can be easily moved from one location to another.

Others are more permanent and meant to stay in one place.

Some tiny homes are tinier than others. Make sure the one you choose will be large enough to be livable for you.

easy to do with solar panels and well water. Many tiny homes come with composting toilets so they don't need to be hooked up to a sewage system.

Smaller Budget A tiny house costs a great deal less to build than a regular house; fewer materials means lower cost. A small base model can be had for around $20,000, which means that tiny-house owners can use potential mortgage funds on other aspects of their lives. It has been reported that upwards of 70% of tiny-house owners have no mortgage payment, where 70% of owners of regular-sized homes still do.

Mobility Tiny houses don't require a large piece of land, and since a lot of them are built on a trailer chassis, they can be moved anywhere at any time. For a lot of tiny-house owners, this is a great way to see the countryside without having the hassle of rents, leases or permanent structure.

Simpler Life A great deal of owners of tiny homes are attracted to the movement for the desire for a simpler life that is more harmonious with nature. They don't want a home that is bulging with excess stuff; they want just the essentials that have meaning to their lives. In addition, tiny houses are in line with nature conservationists due to their energy efficiency in building materials and maintenance, having a smaller carbon footprint.

CONS

Less Space Humans do require a certain amount of space to live comfortably, and sometimes that can be a challenge in a house that's only the size of a bedroom. This also applies to storage, as there will be less of it. You can't rely on big-box stores like Costco to bulk-buy. Where are you going to put it?

Limited Entertaining For most tiny-house owners, a big Thanksgiving dinner with the whole extended family is out of the question unless they have a large patio/deck attached to their tiny house. It might be comfortable for two eating at a fold-down table that also serves as the kitchen cutting board, but any more people than that, and it's too crowded.

Zoning Rules Although a tiny house doesn't require much land, many towns make it difficult to build one. Zoning laws often include a minimum size for dwellings, and a 200-square-foot tiny house isn't usually big enough to make the cut. But for this scenario, you're building on your own land, so hopefully the sky is the limit as to what you can do.

Financing Even though the vast majority of tiny-house buyers purchase their tiny home outright, others have to finance. And usually it isn't possible to take out a standard mortgage loan because most banks don't consider a tiny house to have enough value to be used as collateral.

Mobility Also a pro, having a home that can be moved (even if it is set to the foundation) can be a con. The majority of tiny homes, although tiny, are very heavy in relation to their footprint. Luxury items, full-size appliances and full-size amenities, such as toilets, tiled showers and kitchens, are weighty. Therefore, moving it will require a large truck.

WRAPPING UP

Living in a tiny house isn't for everyone, but if you only need it temporarily while work is being done on your homestead and your permanent home, it could be perfect. It has all the comforts of a full-size house and all the benefits of a small dwelling that has a minimal footprint. Having less space and less stuff to deal with while you are occupied by homestead work and house remodeling means more time for the things that might matter most.

Before you get to work building or buying, make sure you won't have legal problems moving a tiny home to your property.

Ryan Lee Price is a freelance writer living in Corona, California, with his wife and kids. When not exploring the flora and fauna of the backwoods, he is busy climbing Southern California's tallest peaks.

TINY–HOME BUILDERS

Check out one of these for your tiny-home needs.

There is no shortage of tiny-home builders around the United States that will prefab a home and assemble it on your property. A simple Google search will result in dozens to choose from, or you can consider building it yourself with one purchased on Amazon. Below are four companies that provide tiny-house-building services that will fit your needs.

Rocky Mountain Tiny Houses
rockymountaintinyhouses.com
As Colorado's most established tiny-house builder, Rocky Mountain Tiny Houses designs and builds quality tiny houses with an emphasis on customization. Its philosophy is that shelter should be a place of pride and comfort, yet one of simplicity and affordability. Every house is made from scratch, and the company offers unique and creative solutions to any need.

Custom Container Living
customcontainerliving.com
Custom Container Living can build a unique container home that fits your lifestyle and budget. You can choose from any of the container home floor plans and then select the custom options, such as siding type and color, flooring, cabinets, countertops, lofts, kitchens and bathrooms. Most of its floor plans are "Certified Manufactured Homes," which means strict building codes are followed so that it is easier for financing and city approvals.

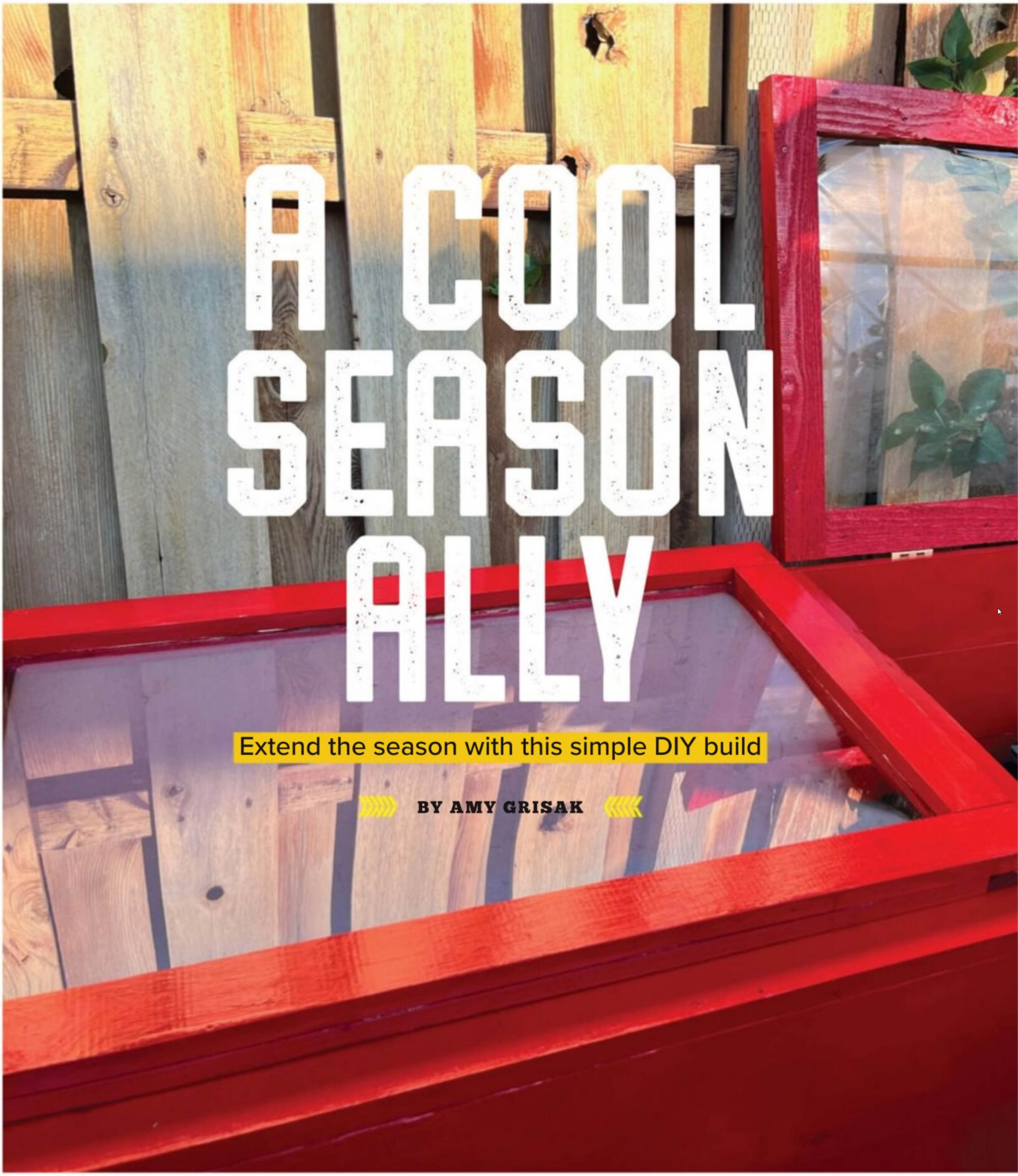
Tumbleweed Tiny House Company
tumbleweedhouses.com
Since 1999, Tumbleweed Tiny House Company has been building a variety of tiny houses for customers all around the country, but now, they only build tiny-house RVs on wheels. RV codes allow a tiny house to be built up to 399 square feet, and the largest they build is 260 square feet, which includes a loft. Financing is available for those who qualify.

Tiny Heirloom
tinyheirloom.com
In addition to selling eight models of tiny homes as well as custom-built tiny homes, Tiny Heirloom offers customers access to high-quality pre-owned options that make ownership more affordable and eco-friendlier. If you are interested in a tiny home but know you will only use it temporarily, consider a pre-owned unit, as it is much cheaper than new.

CHAPTER 3

DIY PROJECTS

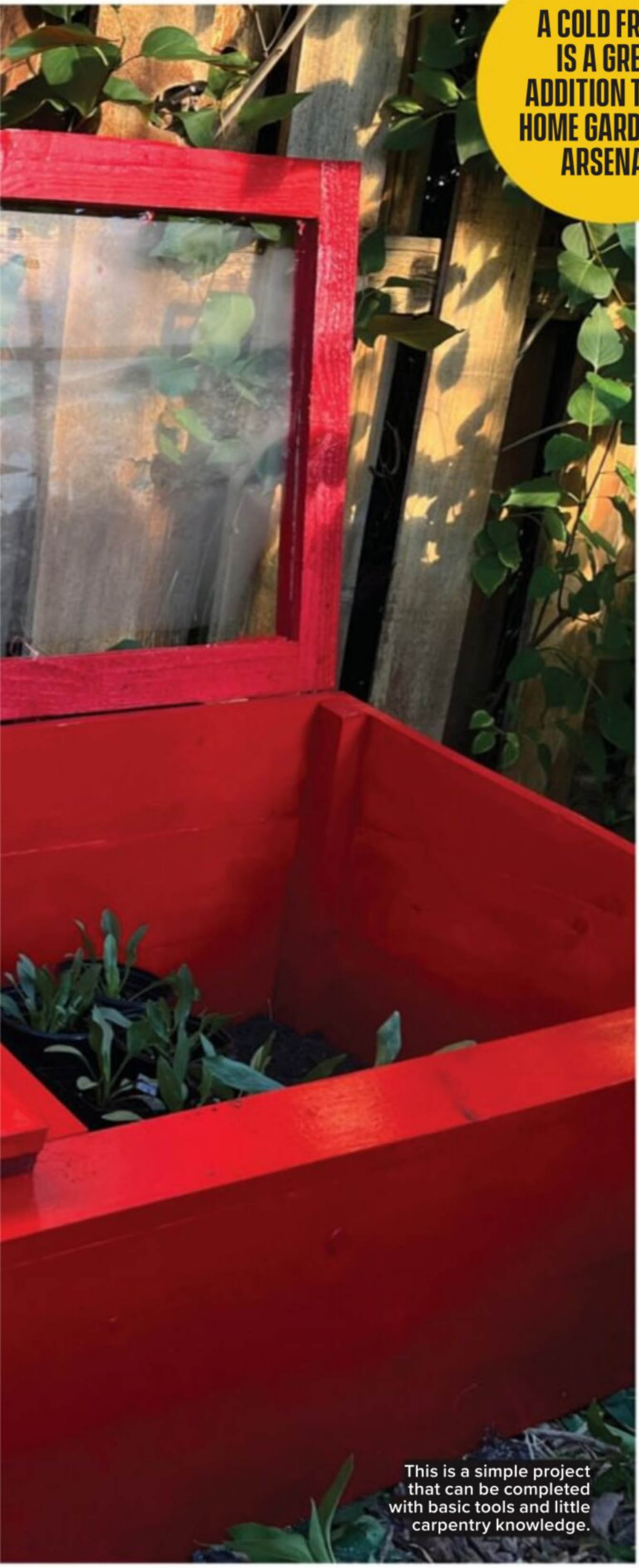
WITH SOME BASIC KNOWLEDGE AND A BIT OF ELBOW GREASE, YOU CAN DO ALMOST ANYTHING.



A COOL SEASON ALLY

Extend the season with this simple DIY build

BY AMY GRISAK



This is a simple project that can be completed with basic tools and little carpentry knowledge.

A COLD FRAME IS A GREAT ADDITION TO THE HOME GARDENING ARSENAL!

PROTECTING PLANTS FROM COLD, WHETHER IN THE CHILLING DAYS OF AUTUMN OR THOSE TEASING SPRING NIGHTS, IS A PERENNIAL CHALLENGE FOR GARDENERS.

One of the simplest and most effective methods is to build a cold frame, which, in simple terms, is a bottomless box with a clear lid. One of the most basic examples is something as rudimentary as four bales of straw with a recycled window or a plexiglass lid placed on top. However, it's easy and economical to build a cold frame that looks as good as it works.

Here's how to do it.

GATHER YOUR MATERIALS

Here is what you'll need:

- (6) 1x6, 8-foot pine lumber
- (7) 1x4, 8-foot pine lumber
- (1) 2x2, 8-foot pine lumber
- (1) 20x32-inch acrylic sheet, 0.093-inch thick
- (36) 1¼-inch exterior screws
- Box of 1½-inch exterior screws
- 2-inch hinges with screws
- 1 quart enamel paint
- 2-inch paint brush

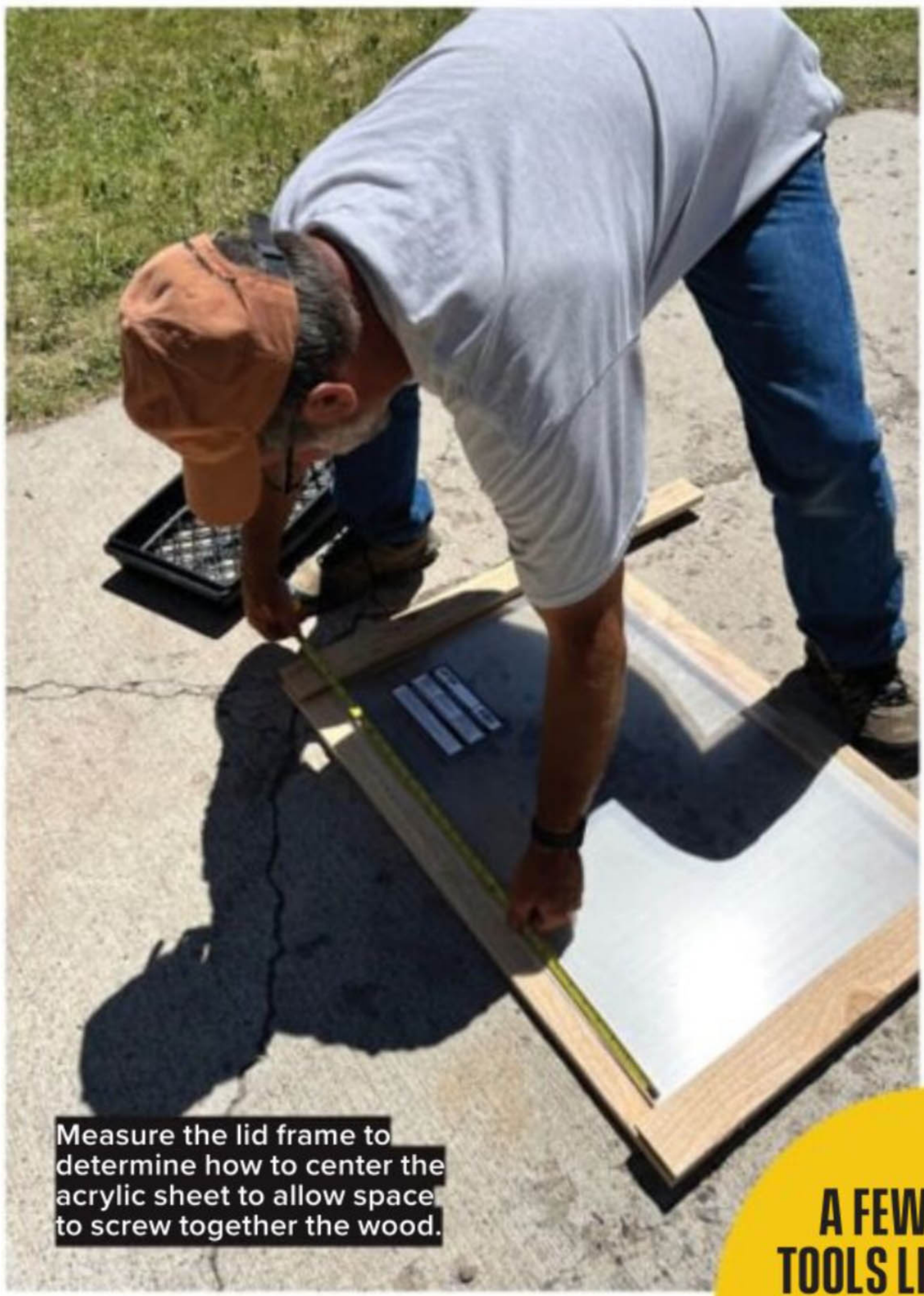
Tools:

- Table saw
- Circular saw or hand saw
- Drill and bit (either Phillips or hex, depending upon the screws used)
- Tape measure
- Pencil
- Combination square
- Straightedge
- Safety glasses

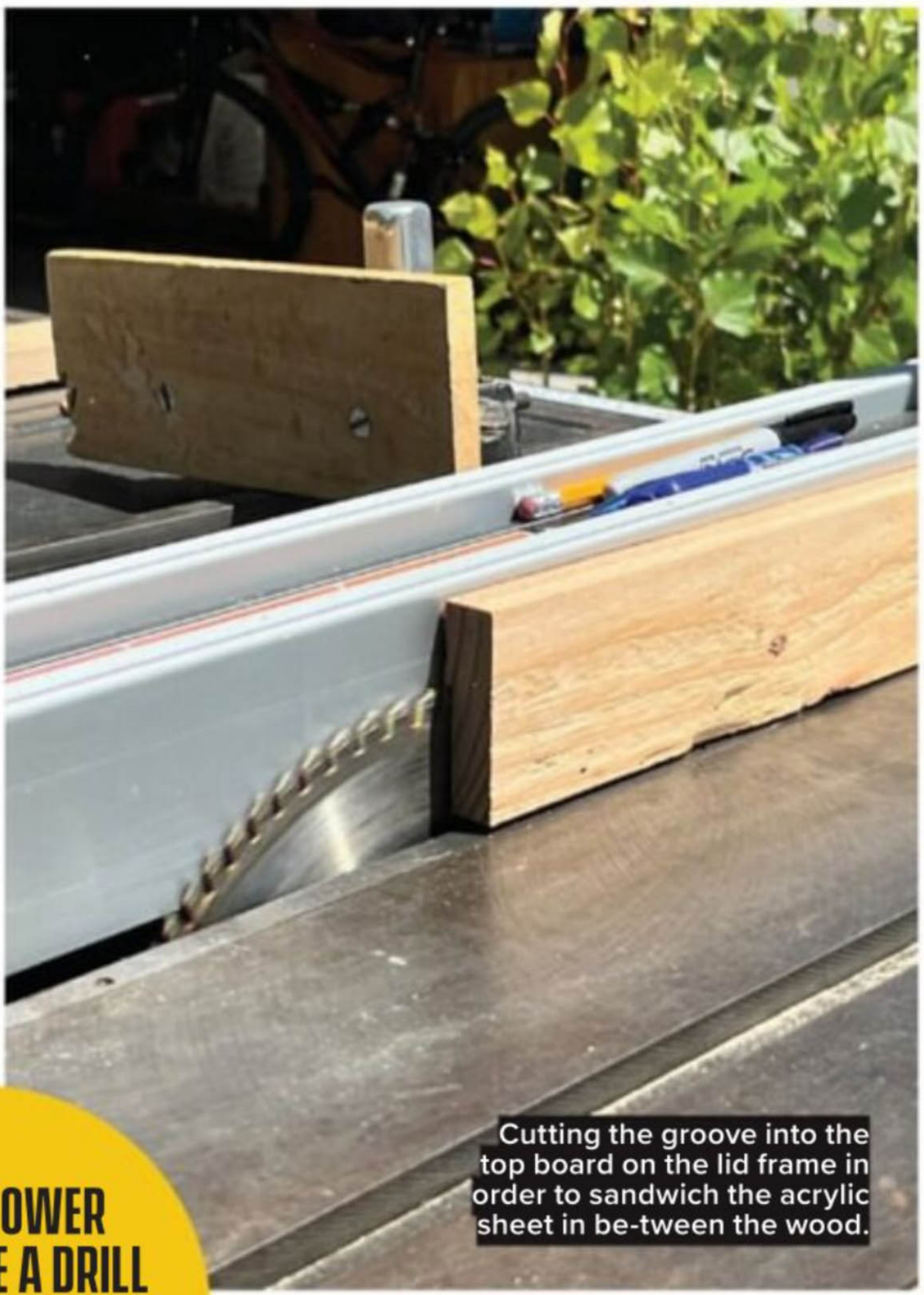
LIDS

The lid is the most essential part of a cold frame. Old windows have long been a popular option, although glass is easily breakable and can create a dangerous situation. Do-it-yourself builders can find sheets of acrylic or polycarbonate in various sizes at most home improvement stores.

For an inexpensive and easy option, you can use Visqueen plastic sheeting, or better yet, 6-mil greenhouse plastic. Sandwich the

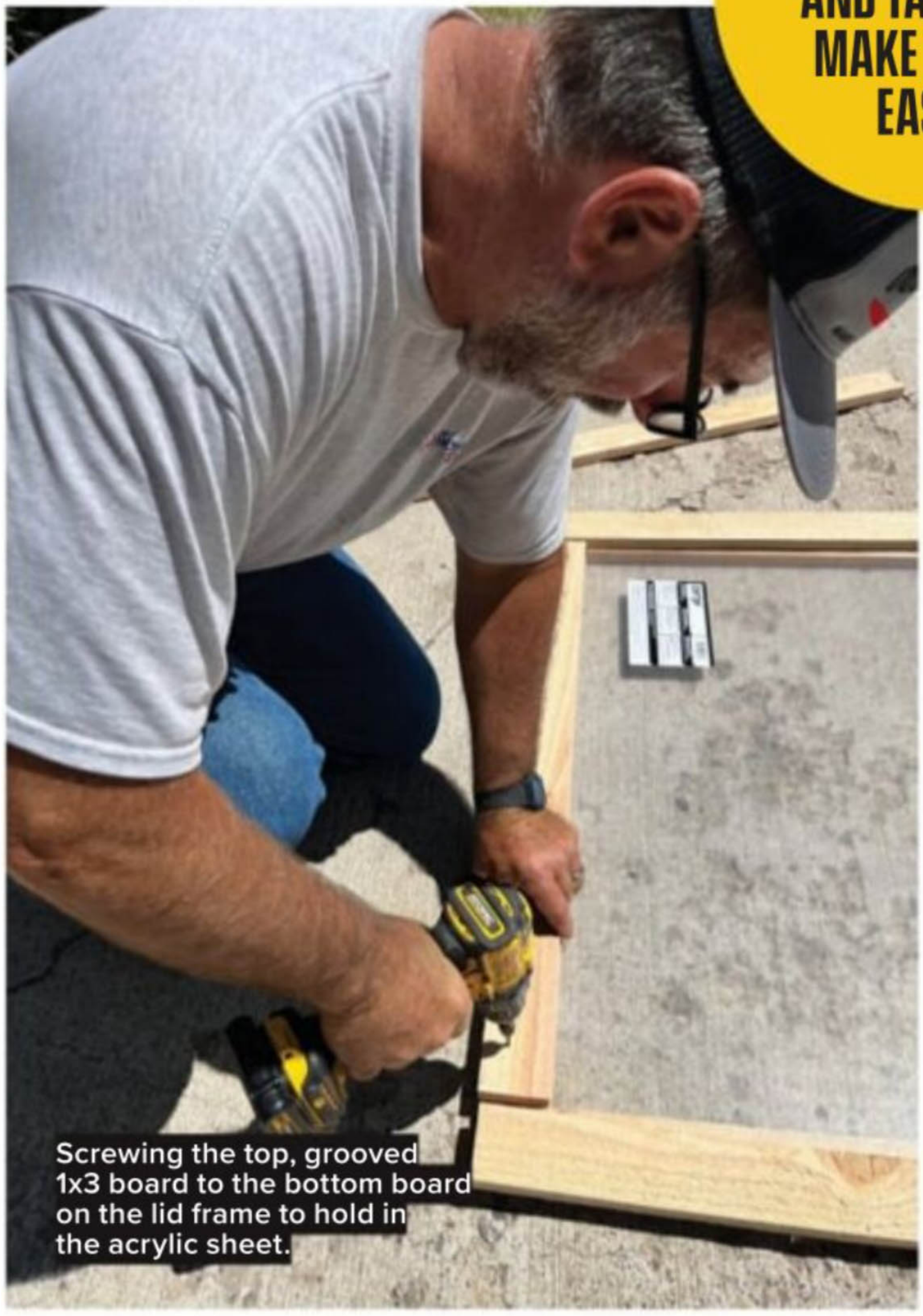


Measure the lid frame to determine how to center the acrylic sheet to allow space to screw together the wood.

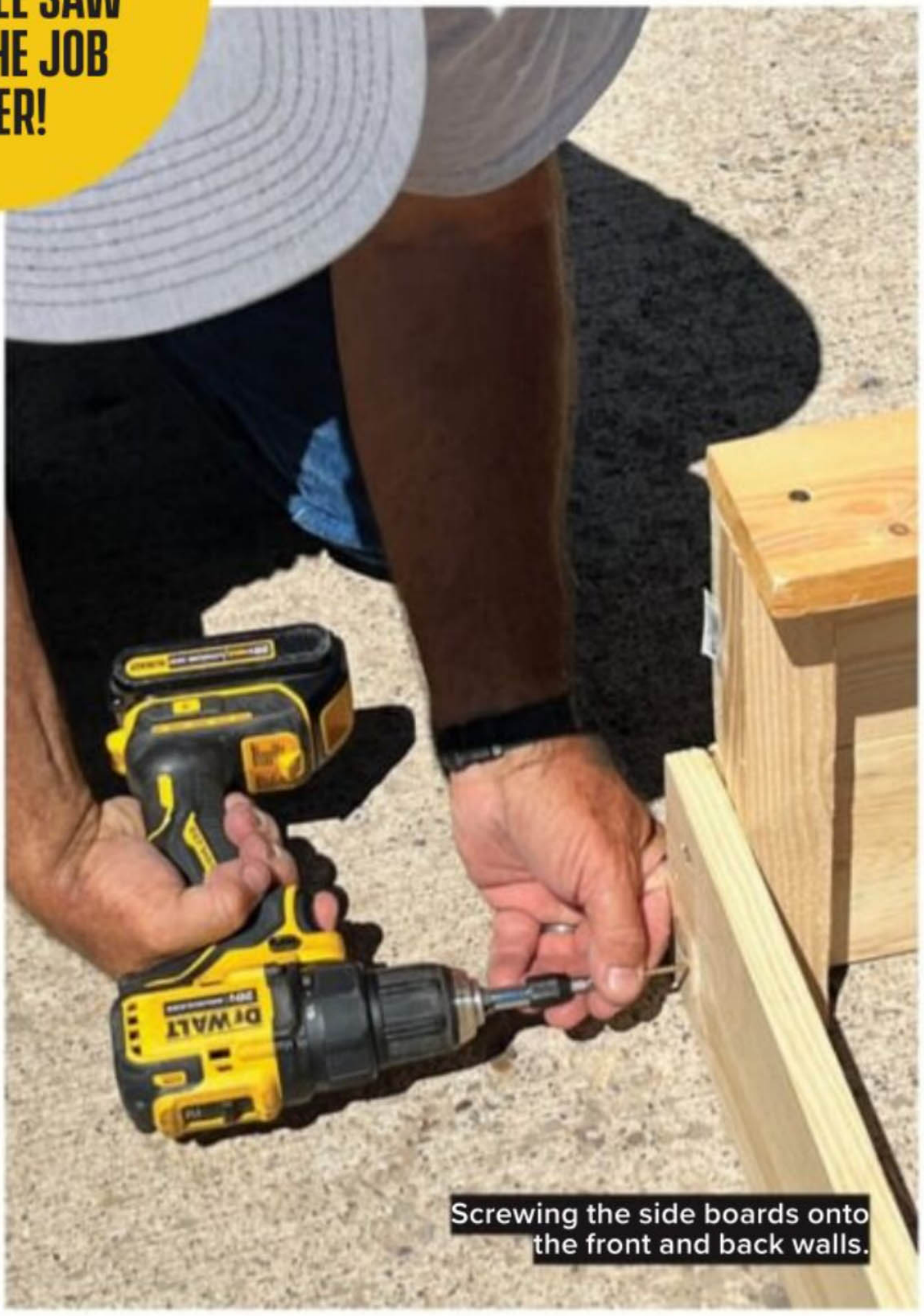


Cutting the groove into the top board on the lid frame in order to sandwich the acrylic sheet in be-tween the wood.

A FEW POWER TOOLS LIKE A DRILL AND TABLE SAW MAKE THE JOB EASIER!



Screwing the top, grooved 1x3 board to the bottom board on the lid frame to hold in the acrylic sheet.



Screwing the side boards onto the front and back walls.

plastic between the boards in the frame we describe, and it will usually last for a couple of seasons.

I've learned the hard way that it's easier to make the box fit the lid rather than the other way around, so make your lids first. For a 20x32-inch acrylic sheet, each frame will be 33⅞x23 inches.

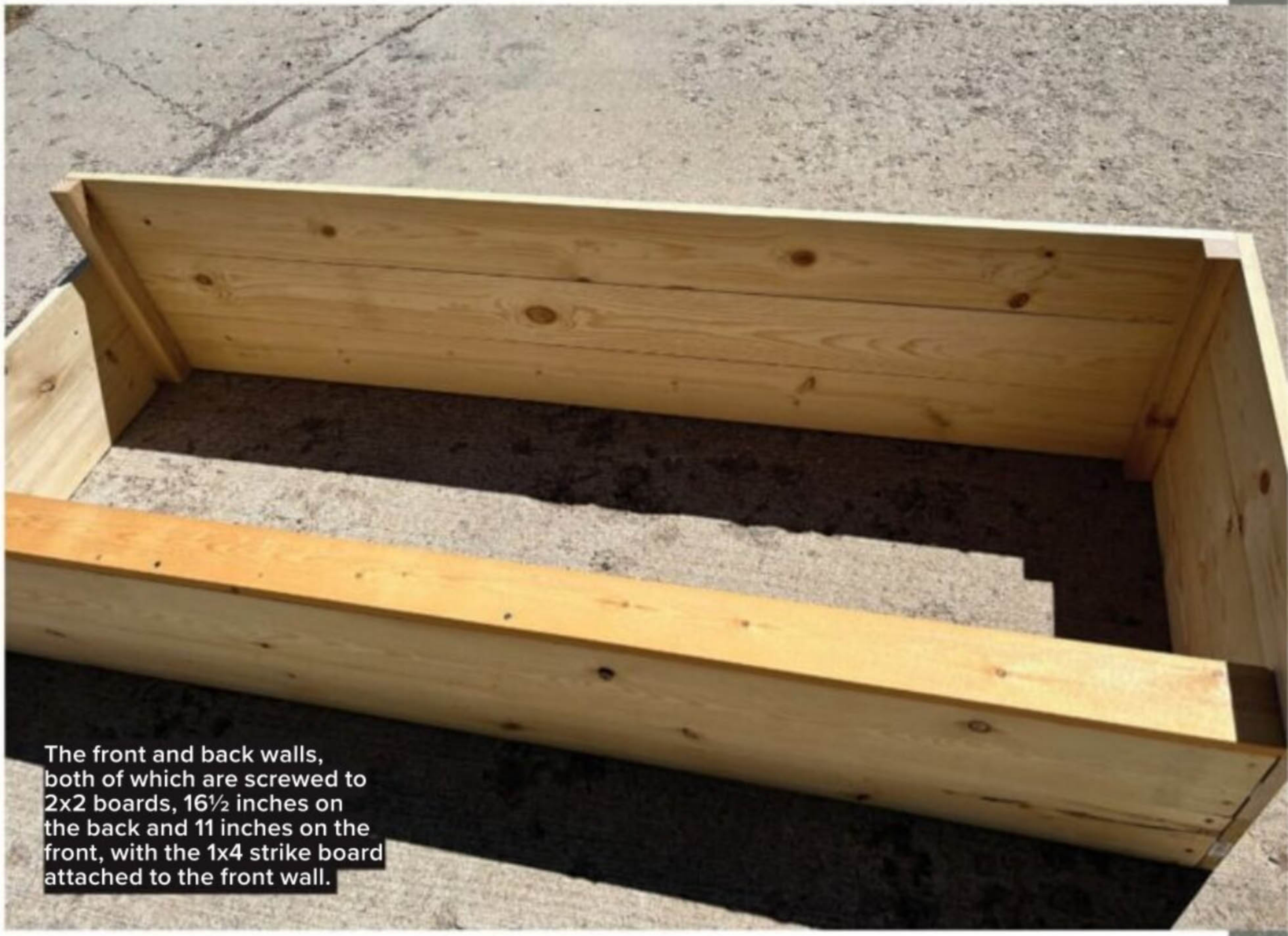
Here's your cut list:

- (4) 1x3 at 33⅞ inches
- (4) 1x3 at 18⅜ inches
- (4) 1x3 at 29 inches
- (4) 1x3 at 23 inches

To create the bottom of the lid frame, place one 33⅞-inch piece on top and one on the bottom. The side pieces are 18⅜ inches. These are set within the interior of the frame, resulting in a total width of 23 inches.

Center the acrylic sheet on the frame, leaving the protective plastic coating on the acrylic sheet. (It's best to keep it in place and peel it off after you paint the frame.)

For the top part of the lid, you will need to cut a 3/32-inch groove in the remaining 29-inch and 23-inch boards to allow them to sit evenly on top of the acrylic sheet. You can accomplish this by bringing the gate on the table saw nearly flush against the blade and setting the blade at the appropriate cutting depth, 1.5 inches, to create space for the acrylic sheet.



The front and back walls, both of which are screwed to 2x2 boards, 16½ inches on the back and 11 inches on the front, with the 1x4 strike board attached to the front wall.

Use a combination square to determine the end point of the lid frame so you know where to begin the upward angle on the side wall.

Once the grooves are cut, place the 29-inch boards on the top and bottom, overlapping the joint to increase the overall strength. Add the 23-inch boards to the sides in the same manner. Join the boards together, sandwiching the acrylic in between, by screwing the 1½-inch screws through the area of the lid frame beyond the acrylic sheet. (Don't screw through the acrylic sheet.)

Repeat these steps to make the second lid.

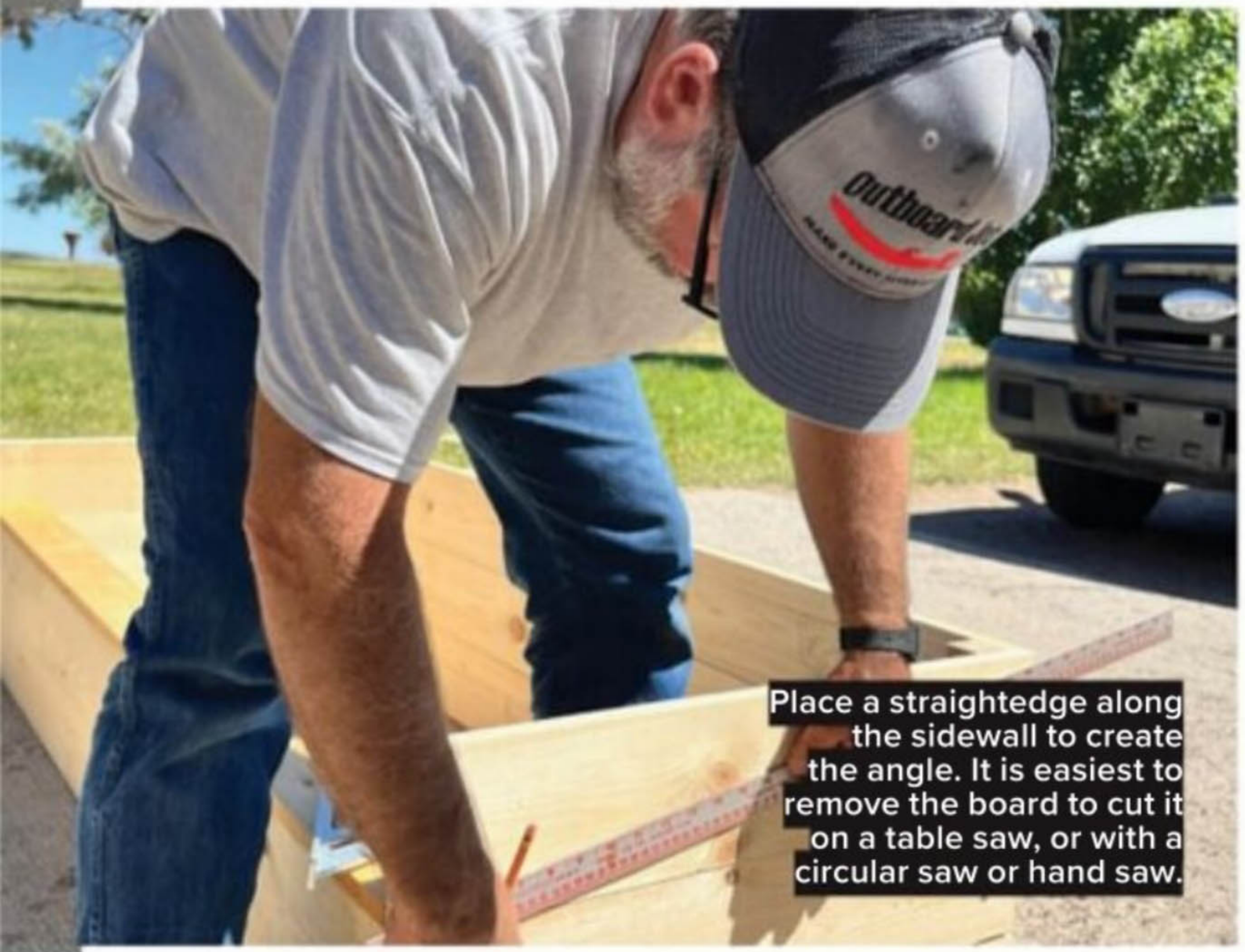
FRONT AND BACK

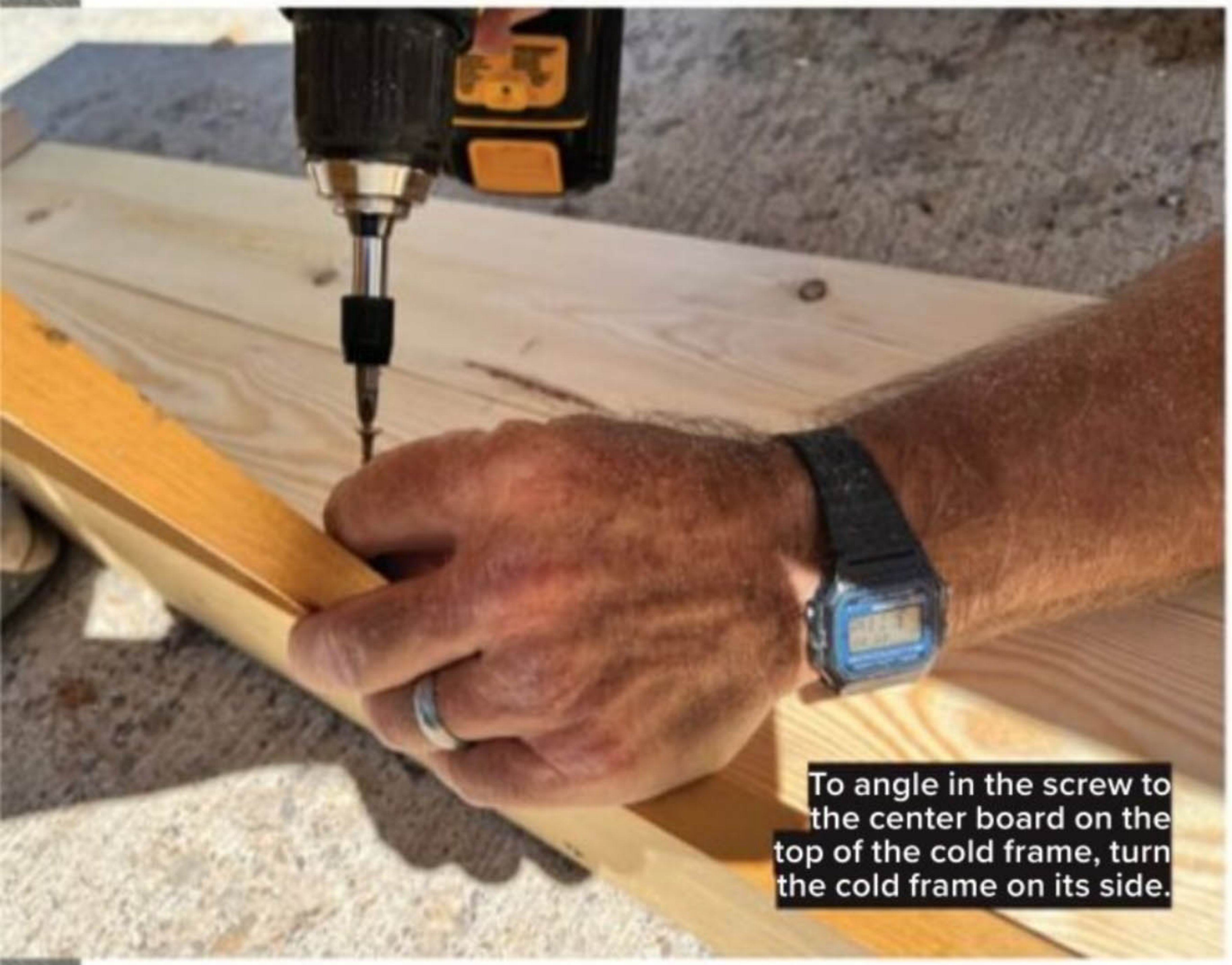
For the front and back walls, this is the cut list:

- (5) 1x6 at 68 inches
- (2) 2x2 at 16½ inches
- (2) 2x2 at 11 inches

Place the 16½-inch 2x2s on the ground and set the 68-inch 1x6 pieces on top of them, making the ends flush on either side. Screw them together using 1½-inch screws, one for each board.

Place the 11-inch 2x2s on the ground and repeat the same process


Place a straightedge along the sidewall to create the angle. It is easiest to remove the board to cut it on a table saw, or with a circular saw or hand saw.


To angle in the screw to the center board on the top of the cold frame, turn the cold frame on its side.

Paint the cold frame using an industrial enamel paint. Give it two coats for the best results.

with the two 1x6x68-inch long pieces to create the front of the cold frame.

To add a little extra width to the cold frame and make it easier to fit standard 21-inch trays, we attached a 1x4x68-inch board to the top of the front wall as a strike plate. We made it even at both ends and the front wall and then screwed it in place using 1½-inch screws. This 1x4-inch board also provides the front of the lids a little more support during heavy snow.

To support the lids in the center, cut a 1x4-inch board to 21½ inches long. You'll need to cut the top end and set the board on top of it.

Hold the center board in place and use a straightedge to determine the slight angle needed for it to fit perfectly. The bottom end of the center board will reach the strike plate on the front wall. Angle the screws from the bottom to secure it in place.

SIDE WALLS

For the sides, here is the cut list:

- (6) 1x6 at 25 inches
- (1) 1x4 at 15½ inches
- (1) 1x4 at 10½ inches

Use three pieces for each side, making sure they are flush with the ends of the front and back walls, and screw them into place.

Now is the tricky part, because you need to cut an angle. Use a combination square to ensure the strike plate on the front of the cold frame is aligned where the lid meets. Then, take a straightedge and line it up to the back. You can use a handheld circular saw to cut this angle, or, if you prefer, unscrew the board and cut the angle with a handsaw or table saw.

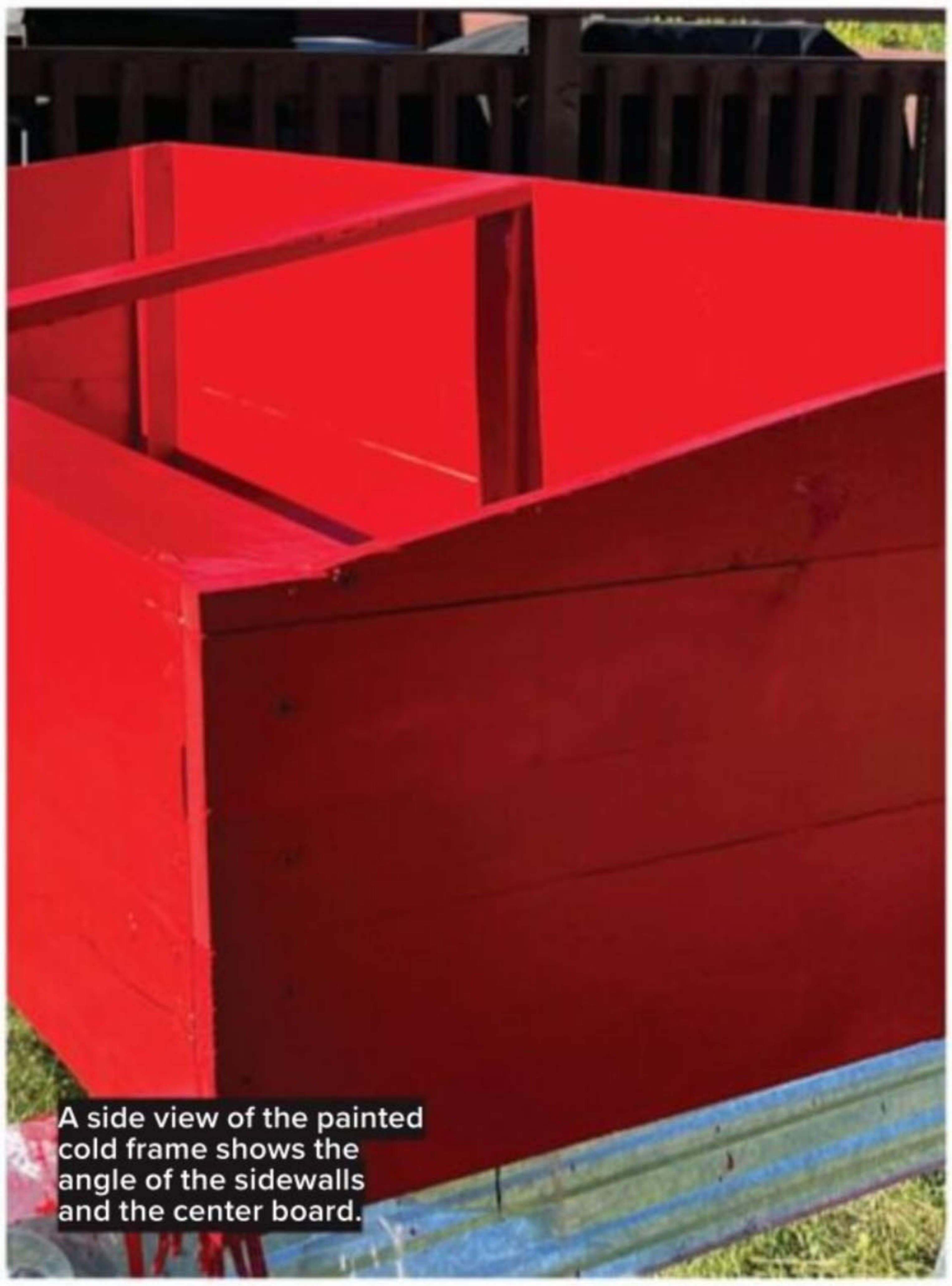
Repeat this process on the other side with the three boards.

For additional stability and to prevent the boards from warping, screw the 15½-inch-long 1x4 board to the interior and middle of the back wall. Screw the 10½-inch-long 1x4 board to the front wall.

PROTECT THE WOOD

Some people recommend using pressure-treated wood to make a cold frame. Using pressure-treated wood is fine because it will last a decade or longer, but the cost can be prohibitive. Additionally, it's nice to paint the cold frame to make it a visually appealing garden feature.

Use something like an industrial enamel paint for your cold frame. My father always painted his cold frame black because he believed it helped retain heat, but feel free to be creative. I opted for barn red to


A side view of the painted cold frame shows the angle of the sidewalls and the center board.

Peel off the protective plastic on the acrylic sheeting after you paint the lid frames.

match other features in the garden.

Paint every part of the cold frame's body, including the bottom edge that will sit directly on the ground. Apply two coats.

Set the lids on a support and carefully paint them, applying two coats. If the acrylic sheet does not have protective plastic, use masking tape or painter's tape to shield it from paint streaks or splatters. After the paint is dry, carefully peel off the tape or plastic.

ATTACH THE LIDS

After everything is dry, set the lids in place and attach the hinges, two for each lid, on the back. You can also attach a hook-and-eye latch on each side to keep them in place during windstorms.

SET IN PLACE

The best location for a cold frame is a sun-filled, south-facing aspect. It can be set directly on the ground, especially if you want to plant in the soil, or keep it on a solid surface to hold potted plants.

This cold frame holds a half-dozen standard planting trays and will be hugely helpful in the spring when I transition my plants from their cozy indoor environment to outdoor conditions. During warm days, they will be happy protected by the wind within the cold frame. When the weather is cold, they can remain outside, protected by the lids that allow sunshine inside while keeping out the elements.

Amy Grisak specializes in gardening in the challenging conditions of the Northern Plains and uses her home in Great Falls, Montana, as the ultimate testing grounds. From grafting tomatoes to extending the growing season as long as possible, she's always trying new varieties and exploring innovative growing techniques. Follow her adventures on her Substack page, Nature Calls, or her website, amygrisak.com.

USING YOUR COLD FRAME IN THE FALL

Many of us are familiar with using cold frames to protect tender seedlings in the spring, but they're incredibly valuable in the autumn.

Seed cool-weather crops, such as chard, lettuce and spinach, inside the cold frame roughly a month before your last frost date. Until the weather begins to flirt with freezing at night, keep the lid propped open with a stick or a temperature-controlled opener. When the nights dip into the low 30s, close the lids every evening. By doing this, it's possible to harvest through Thanksgiving or even beyond in the northern United States.

MANY FUN HOBBIES CAN BRING IN SOME EXTRA CASH ONCE YOU PUT YOUR MIND TO IT!

Check local ordinances to ensure you can keep bees before you invest money in supplies and gear.

FINANCIAL SURVIVAL

Selling crafts and services for income

BY CHRISTOPHER NYERGES

IT S A GOOD LONG-TERM TACTIC TO LIVE FRUGALLY AND LEARN HOW TO MAKE MANY OF THE THINGS WE NEED. THAT ALLOWS YOU TO LIVE BETTER WITH LESS.

Honey can be sold at local farmers markets or craft fairs, and direct to your neighbors.

In addition, you always need to generate cash. Let's explore some ways in which you can create some extra income. Remember, these are basic ideas, and you have to decide what works for you, and run with it.

MAKE AND SELL

If you have the ability to make something that people want, you can probably always have some income from this. Lots of people make soaps, candles, woven bags, clothing and leather goods. As long as you make something that people actually need, you will have a market for them.

Arts and crafts are a little iffier, because you're creating something that no one actually needs, but just wants. Part of your challenge will be to convince people that they actually don't just want your arts and crafts, but they actually need it. Sometimes that works, sometimes it doesn't. You know, wooden carvings, wreathes, cards, metal crafts, baskets, those sorts of things. However, if you really love to do these crafts, and you do them well, you might actually make a name for yourself and people will buy them and pay you well because you made it! There are a handful of potters, basket-makers and artists with clients who will willingly pay a great price for their work.

ANYTHING YOU CAN MAKE, GROW OR REPAIR CAN THEORETICALLY BRING IN SOME EXTRA INCOME, AS LONG AS YOU CAN FIND CUSTOMERS FOR IT.

THINGS YOU CAN GROW

Food is one of the major categories of products that everyone needs. If you have a small farm or a backyard garden, you can create a niche product that could provide income for your family. The key is to get to know what's out there. Be observant to what people are buying in the trendy stores, in the farmers markets, and even online. A good place to begin is with plants that already grow well in your area, and plants that you know how to grow.

Alfonso repairs bikes and sells refurbished bikes for extra income.

SERVICES YOU CAN OFFER

When you're in the position of needing more income, and you don't particularly want a full-time job working at someone else's business, make a list of all your skills and talents. Write them all out on a sheet of paper, whatever they may be, both hobbies and trained skills.

Look at them objectively. What are some of the services that people need, things you can just go and do if you have the skills? Dog walker, dog washer, auto mechanic, cook, food canner, gardener, tree pruner, winemaker, electrician, plumber, nurse, teacher, editor,

Janice Cooney operates a repair business for backpacking and outdoor equipment. If you know how to sew, you can learn how to repair equipment, too.

musician, woodworker, handy work, roofing, cleaning, sewing and repairing garments—the list goes on. Your job is to decide which of your skills you can market, prioritizing those skills you'd really like to do more often.

Once you make your list of skills and talents, then circle the top three that you want to pursue. Then, make another list of at least three ways you can move forward in presenting your skills to the public with each of your chosen talents. That means you must actually see where someone will hire you or pay for your services. Then you have to advertise in every way you can, preferably starting with all the possible free advertising.

SELLING YOUR PRODUCTS

Start your business enterprise in your own immediate neighborhood and within your own circle of friends. You can talk to neighbors and give them a flyer about what you sell and how they can acquire your services. Make it easy for people to say yes.

We have engaged our neighbors in numerous home businesses, beginning with selling eggs door to door when we had many chickens. We've also sold potted plants, edible cactus and fruits in this same manner. We've sold sewing and cleaning services this way, too.

One of my close friends reported that when he lived in a small rural town, it was common to offer canned goods, produce, repair services, plumbing and electrical services, and auto repair at discounted prices to neighbors. Of course, the economics of a small town are very different than living in a city for some very obvious reasons.

Are there any secrets to marketing your

homemade goods? In today's world, it's best to identify your particular niche and to focus your advertising there. For example, your product may appeal primarily to single men, or it may appeal mostly to women with children. Next, come up with a catchy name. A good name can make all the difference between no sales and working hard to meet the demand.

I knew a vendor who sold large bars of homemade soap. He wrapped each bar in mache-type paper, and he called it "mystic soap." It was a real hit—not because anyone thought it would give them psychic abilities, but simply because people liked the name. Work on the name of your business and your company.

DOLLAR ALTERNATIVES

Is there a need to create a dollar alternative, like scrip currency? Sometimes, in certain unique circumstances, the members of a community have created their own alternative money that they print and circulate among themselves. We are aware of this occurring at a school or remote community, and even in some economically developing countries where there are no banks. This might be a viable solution for getting people to produce and exchange goods, and getting out of poverty. It should be well thought out to accommodate growth, and to take fraud into account. Such a system tends to work best when it stays small, like under 500 people, but as it grows, your community should probably consider forming a credit union-style bank.

Skilled artisans might never get rich, but they can always make a living. Here, Mayan priest Miguelangel Vergara discusses reproductions of obsidian knives with student Helen Wong.

CUT COSTS TO SAVE MONEY

Make a list of all your expenditures, large and small. Write them down so you can look at them objectively. Some you may be able to eliminate outright. For example, you might have a third car that just continues to cost money in insurance and storage. Sell it, or give it to charity.

Maybe you rent a garage or rental unit to store all the junk that you have that didn't fit into your apartment. You pay a few hundred dollars every month to store stuff that you never look at, and will probably never use.

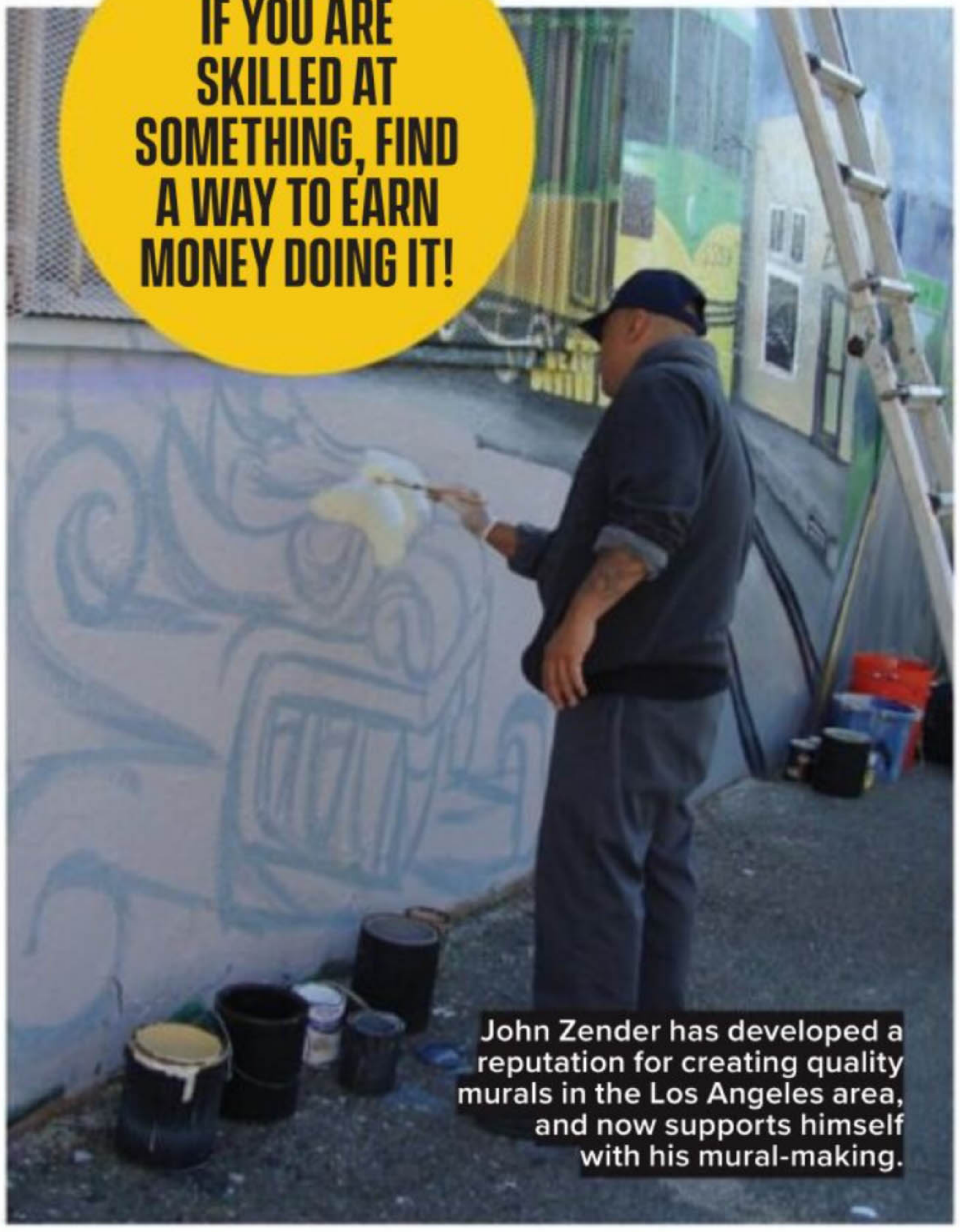
Can you bundle insurance payments? If you have a good driving record, sometimes you can just request a lower rate. I once told my agent that I wanted a lower rate, and he said he couldn't do it. Miraculously, he found a way to do it when I told him I was going to cancel that policy.

Where there's a will, there's a way. Think about skills you possess that you might be able to monetize to bring in extra cash.

extreme simplicit
A Guide to Urban Homesteading
FORAGING
California
SECOND EDI

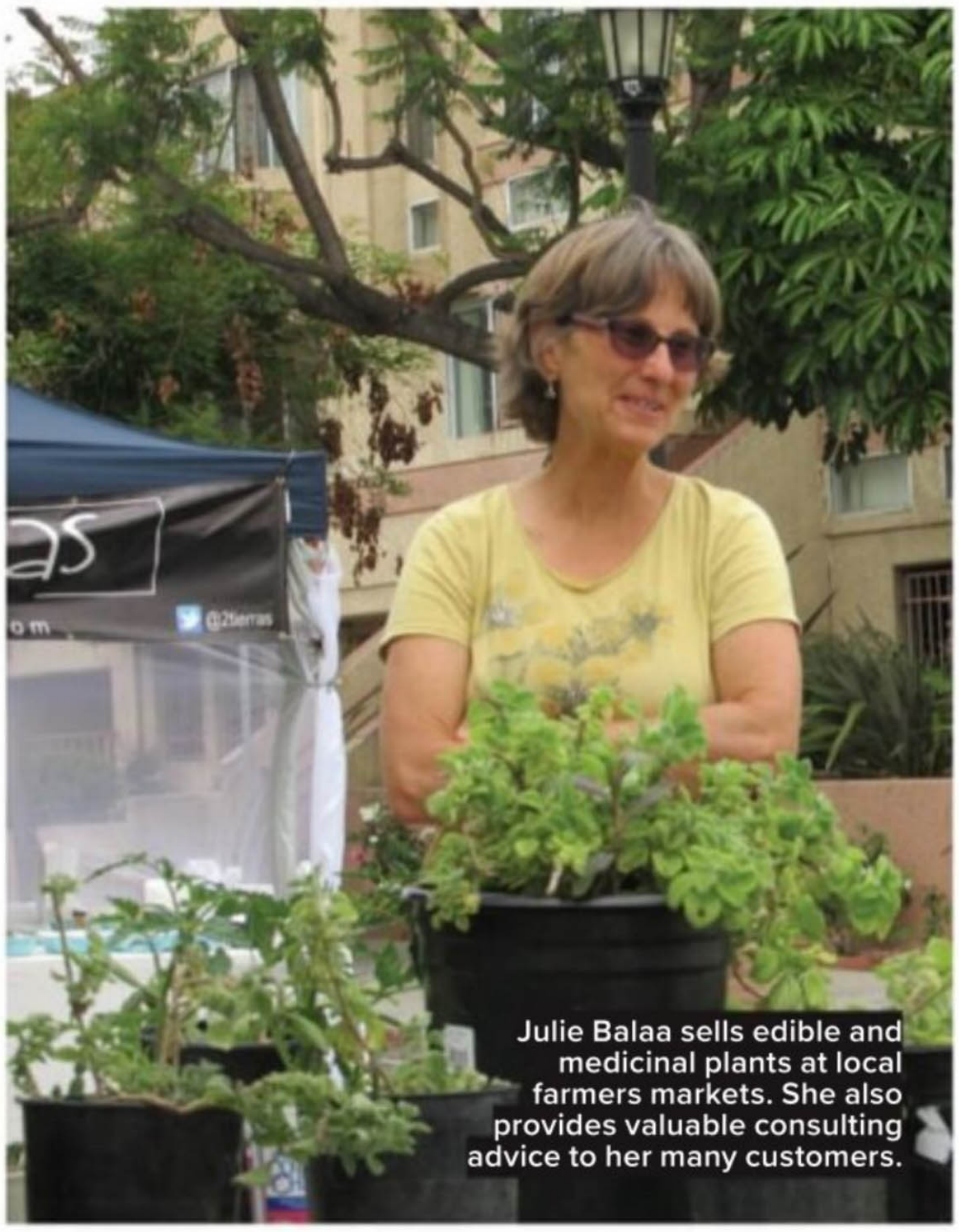
Writing books and magazine articles can earn you money while you share your knowledge with others.

IF YOU ARE SKILLED AT SOMETHING, FIND A WAY TO EARN MONEY DOING IT!



John Zender has developed a reputation for creating quality murals in the Los Angeles area, and now supports himself with his mural-making.

Toruno works sharpening knives while the customer waits.



Julie Balaa sells edible and medicinal plants at local farmers markets. She also provides valuable consulting advice to her many customers.

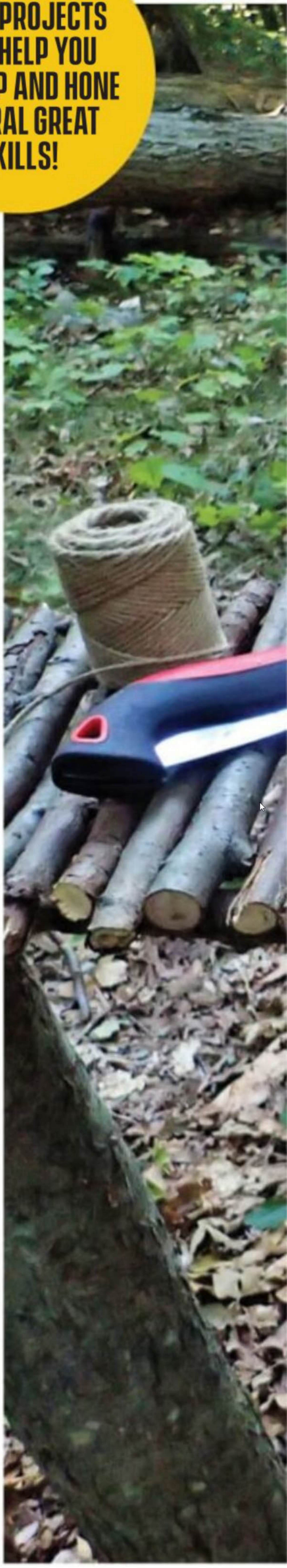
Christopher Nyerges has written nearly two dozen books. One of them, *Extreme Simplicity: Homesteading in the City*, describes how he and his wife practiced many of the self-employment methods described in this article, especially during a period of economic hardship. The book is available on Amazon, or from the store at schoolofself-reliance.com.

BUILD THESE TABLES

Give yourself space in the field

BY REUBEN BOLIEU

THESE PROJECTS WILL HELP YOU DEVELOP AND HONE SEVERAL GREAT SKILLS!



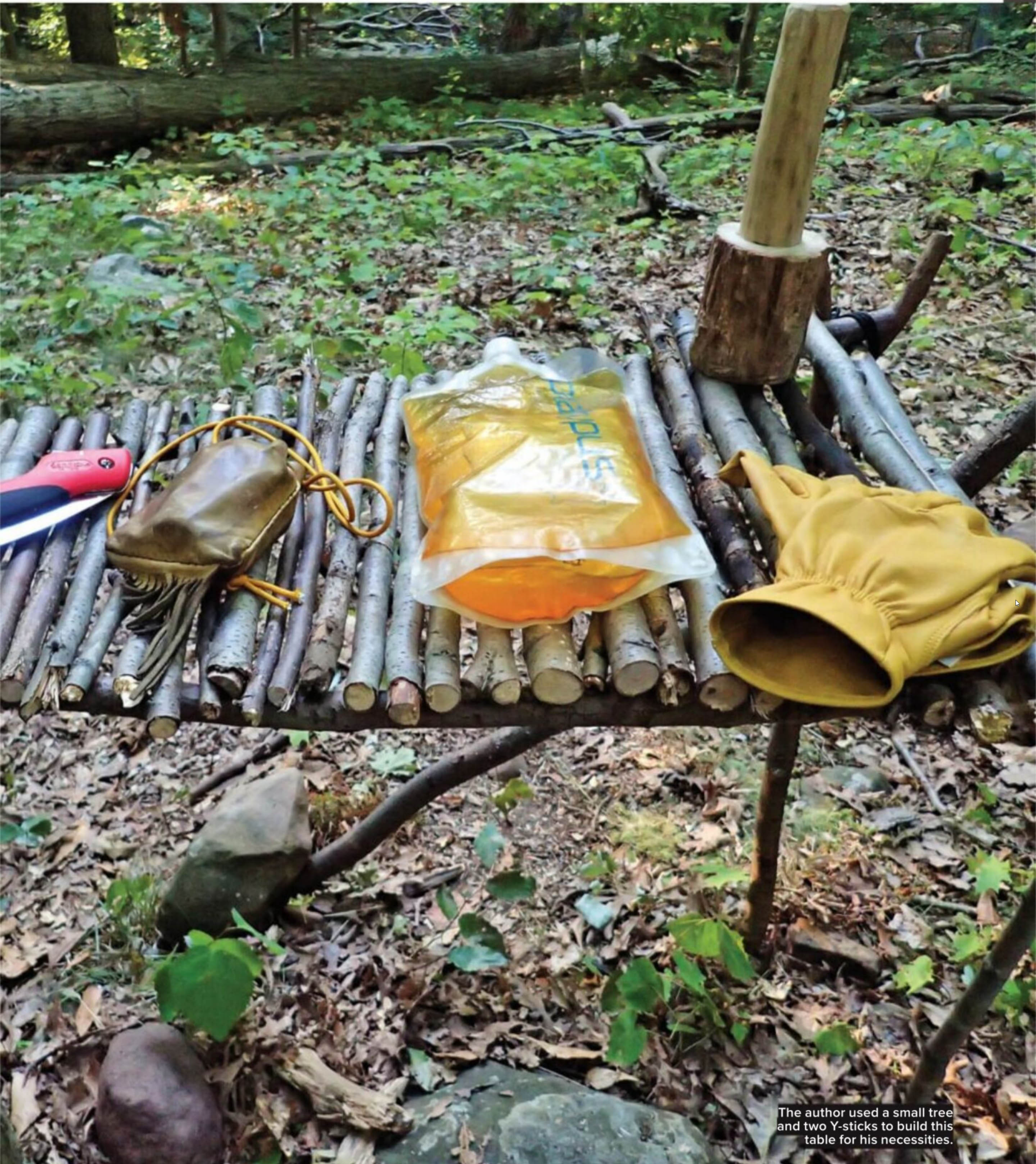
LET'S FACE IT, THE FOREST FLOOR ISN'T YOUR FRIEND. IT'S DAMP, BUGGY AND LITTERED WITH STUFF YOU DON'T WANT ON YOUR GEAR. TOSS YOUR GEAR DOWN THERE, AND YOU MIGHT AS WELL BE GIFTING IT TO THE LOCAL RUST GODS, AND CARPENTER AND FIRE ANTS.

That's where a solid camp table steps in like a seasoned trail boss. Minimal tools like a saw, baton, knife and cordage can help make your camp luxurious while keeping your rustic woods cred.

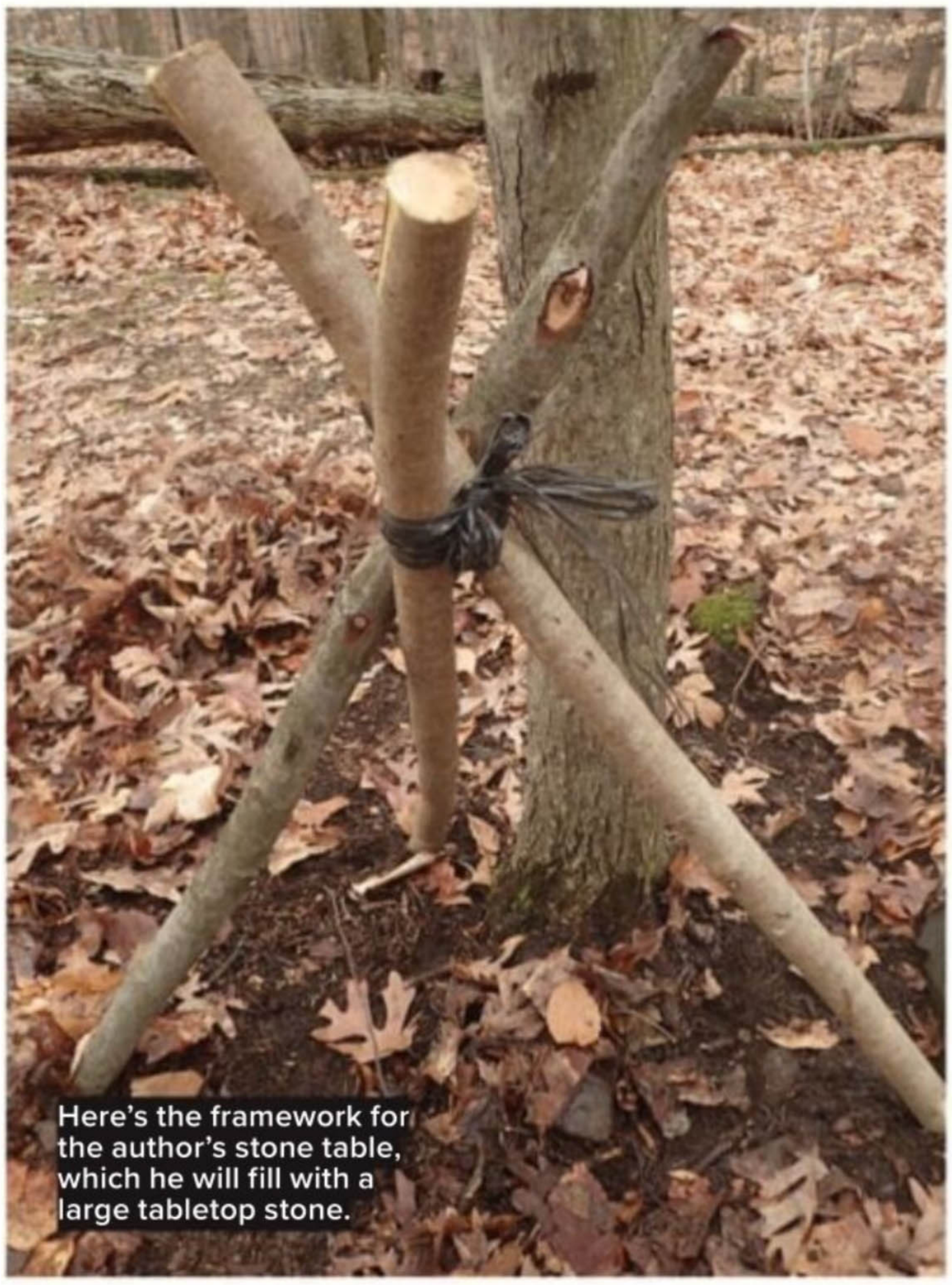
HIGH AND DRY

Snow, mud, spilled coffee—whatever the forest throws your way, elevating your gear is the first line of defense. A raised surface keeps your essentials out of the muck and within arm's reach. Knives stay sharper, saws remain cleaner, and your stove isn't suddenly a swamp fixture.

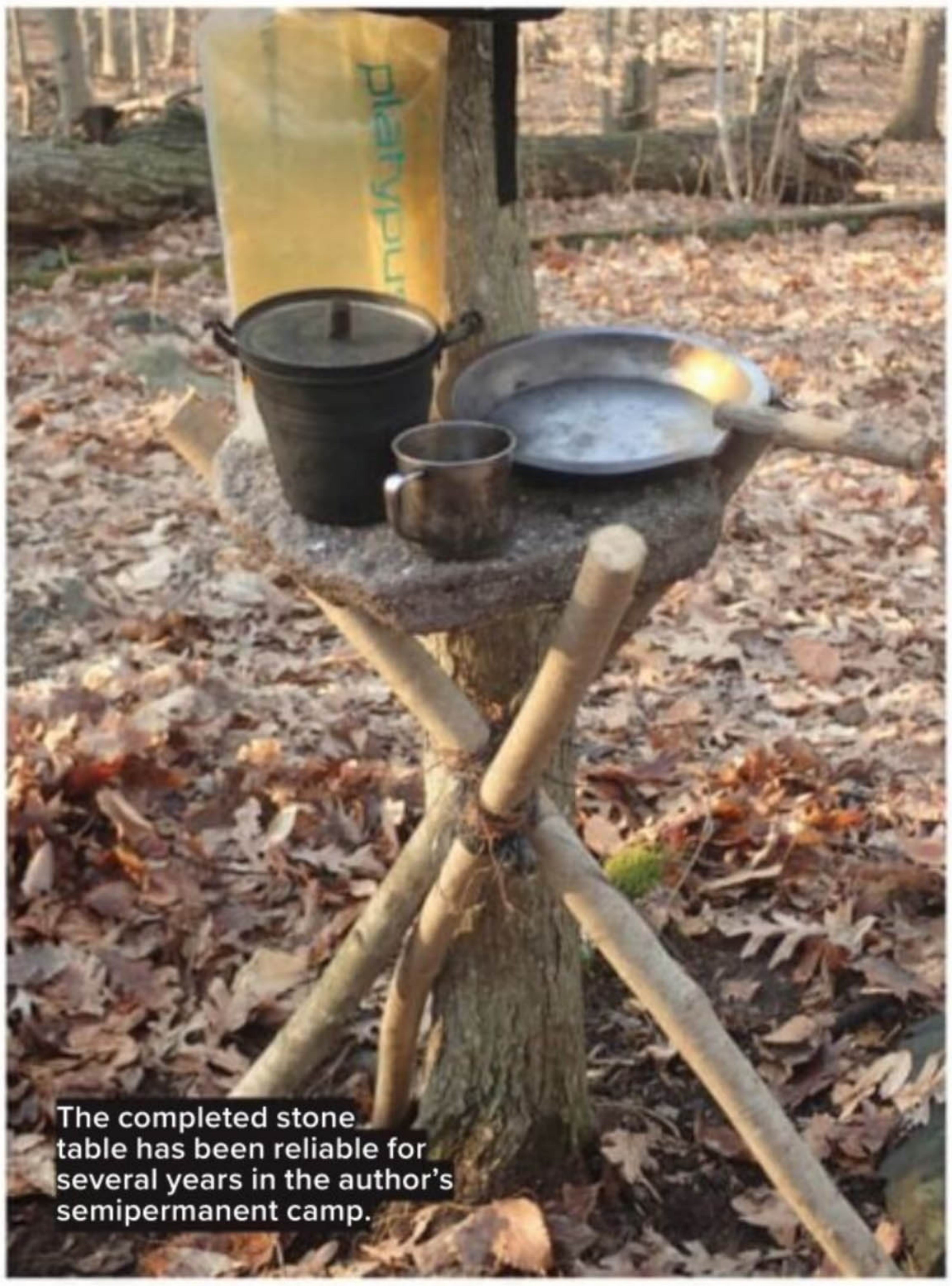
If you've spent 20 minutes bent over a log trying to clean a trout or processing food, you've probably felt it in your lower back the next day. Tables lift the task to where your body wants to work: waist height. You move faster, stay organized and save your spine for when it really counts—like hauling your buddy's overpacked rucksack out of the brush.



The author used a small tree and two Y-sticks to build this table for his necessities.



Here's the framework for the author's stone table, which he will fill with a large tabletop stone.



The completed stone table has been reliable for several years in the author's semipermanent camp.

THE WOODSMAN'S WORKBENCH

Imagine your table as the heart of your outdoor adventures. It's more than just a surface; it's where you sharpen your knife, tune your ax or prepare a warm campfire meal. With everything organized within reach, you can focus on enjoying nature without worrying about your gear rolling away.

You don't need fancy materials to create a reliable workspace. Use sturdy limbs, a flipped stump or stacked stones to build a table that suits your needs. What matters is its utility; as long as it holds your gear steady, it earns its place in your essentials.

Think of your table as a companion that enhances your experience, whether cooking, sharing stories under the stars or soaking in the tranquility of the woods. So, gather your materials and craft a table that reflects your adventurous spirit.

THE STONE TABLE

Inspiration often strikes in the most unexpected of places. One afternoon, while strolling through the vibrant streets of Hong Kong, I stumbled upon a stunning plant display outside a charming local store. The arrangement featured a delicate bamboo tripod that elegantly cradled a smooth, round wooden tabletop, creating a harmonious blend of nature and craftsmanship. This sight sparked my imagination, and I couldn't help but envision a way to recreate that enchanting piece in the forest.

With a renewed sense of purpose, I ventured to my local woods in the Northeast, where the fresh scent of earth and the soothing rustle of leaves filled the air. As I roamed amid the towering trees, I discovered a remarkably round, flat stone, its surface cool and worn by time. Carefully, I dragged it back to my campsite, feeling excited with each step.

Once at my semipermanent camp, I scouted for the perfect tree to serve as a steady backbone for my creation. After selecting a sturdy specimen, I fashioned a tripod, expertly lashing the poles together for added security. With great pride, I positioned the smooth stone atop the open structure, and to my delight, it stood resolutely, a testament to my vision. Years passed, and the sturdy setup remained a steadfast companion throughout my woodland adventures. Reflecting on that day in Hong Kong, I am grateful I chose to wander instead of taking a cab. It led me to a beautiful journey of creativity and connection with nature.

TREE WEDGE TABLE

Here's an easy-to-make table that requires several pieces of saw-cut wood. It is wedged between two trees that aren't too far apart. You'll need four tall Y-forked branches. Depending on the width of the trees, gather two stout pieces of wood (head/foot). Angle the Y-forked branches against each tree and place the stout head/foot chunks of wood to wedge against each tree.

Get two broomstick-thick sticks and lay them across the stout head/foot pieces. There's your frame. Now for the tedious part. Gather several sturdy sticks and use a saw or chopping tool to cut them to fit as needed to fill in the space between the trees.

LIKE A SWAMP GRILL

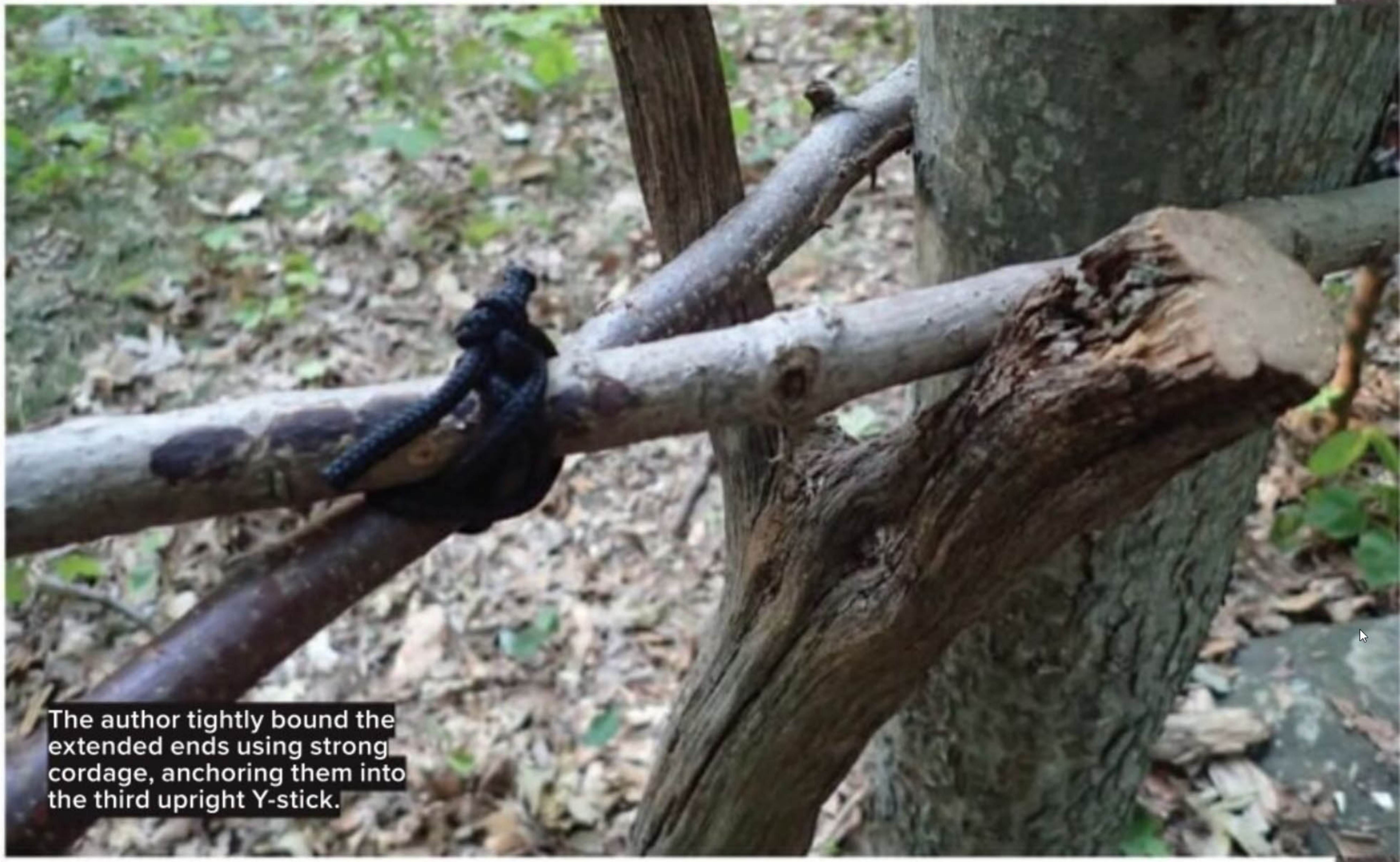
A swamp grill is what we make in the jungle. It's the simplest structure and carries over to a bench and bed (those will require larger selections of timber). To make it into a table structure, use thumb-to-broomstick-thick branches. I

THE RELISHED PILOT STICK

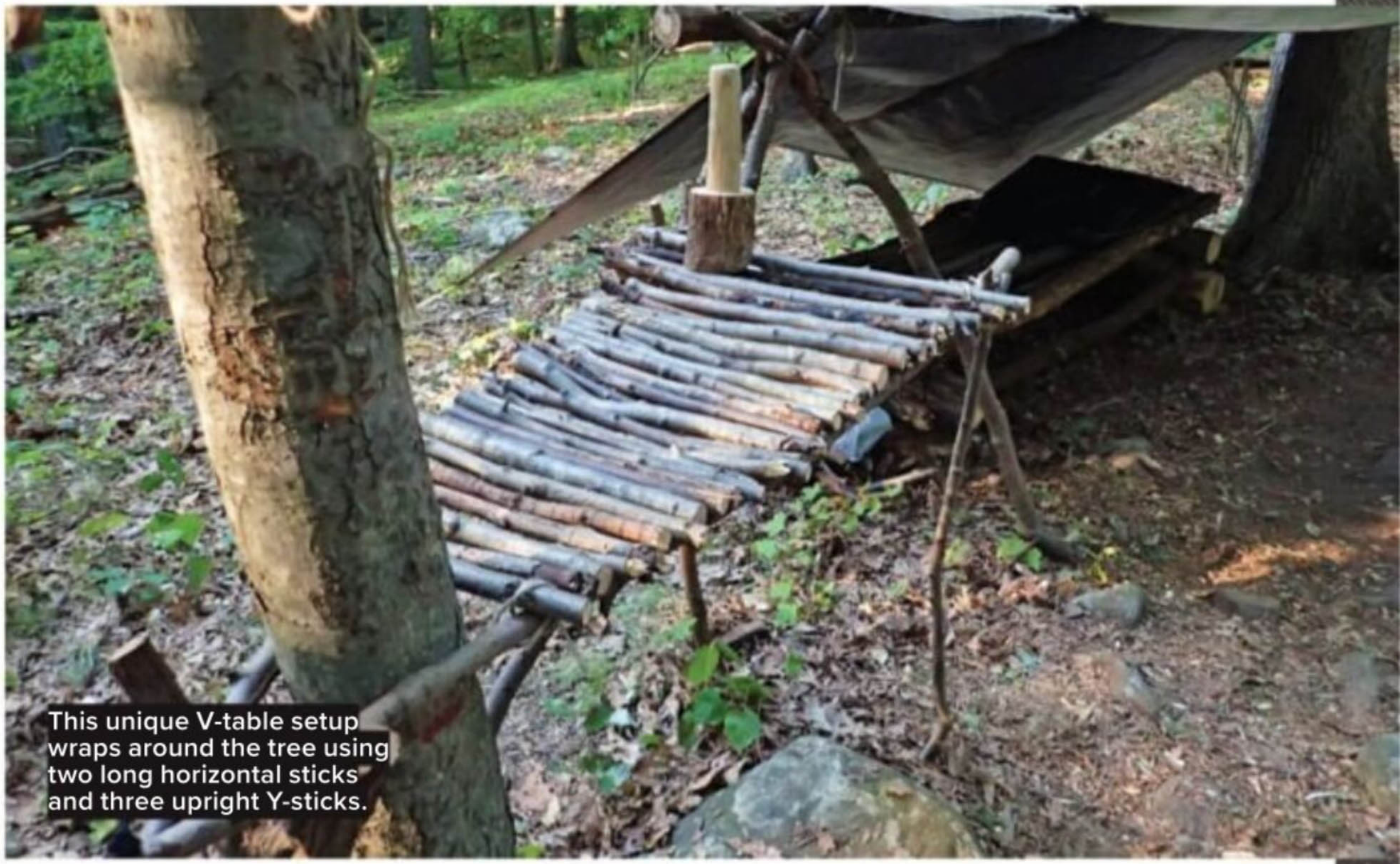
This is a hardwood, premade stick designed for digging holes that require a Y-stick. Why is this important?

If you attempt to use a Y-stick for this purpose, you'll quickly discover its limitations. Hammering on the middle of a Y-stick can easily cause it to split. Additionally, the Y-shaped branches often favor one side, making them prone to splitting with minimal force as you try to seat them in the ground.

That's where pilot sticks come to the rescue. They absorb the impact, allowing you to drive your camp tables or other items into the ground without damaging your camping gear.



The author tightly bound the extended ends using strong cordage, anchoring them into the third upright Y-stick.



This unique V-table setup wraps around the tree using two long horizontal sticks and three upright Y-sticks.

suggest making a strong pilot stick (see sidebar, page 79) for this and all structures here requiring Y-sticks that need to go into the ground.

Since these structures are not subjected to heat, they can be made from dry deadwood. As long as the wood is not rotten, it will be fine for constructing tables. Remember, any piece can easily be substituted or replaced as needed.

Harvest four Y-sticks and put a rough point on the ends. Use a pilot stick to make the holes and insert the Y-sticks until they are solid and level in the ground. Procure two short, stout sticks. Lay them in the Y-sticks across the narrow ends or head/foot ends. Lastly, lay a course of long sticks reaching each narrow crosspiece. Bravo, you have a table.

UPRIGHT LASH TABLE

You need cordage for this table build. I used jute twine initially, but I don't recommend it unless it's for a one-night camp. Long-lasting, sustainable camps will need bankline #36, 550 paracord or wire. Get a stout pilot stick to do the dirty, grunt work. A baton, ax or tomahawk poll will do just fine.

Start by driving four sturdy poles into the ground at waist height, ensuring they're positioned near a tree for added support. Instead of traditional Y-shaped sticks, grab some durable cordage and use it to securely attach the cross pieces of wood. Use a square, jam or constrictor knot to bind the pieces taut. This will create a solid framework for the final layer—an inviting bed of cross pieces made from branches. Do you see the patterns?

The author's upright lash table requires four sturdy poles driven into the ground to start with.

In this scenario, all the weight of the wood and gear will depend heavily on the cordage. Make it good, reliable and tight.

V-WRAP AROUND A TREE

This unique table setup was one of my first constructions in the Northeast, and I'm proud of how it turned out. It just made sense in my mind, and I'm thrilled that I was able to bring my vision to life.

To create this piece, I used three sturdy upright Y-sticks and two long, semiflexible sticks as my supporting framework. I began by planting two Y-sticks firmly in the ground and laying a classic crosspiece across them. The magic began when I set the two long, flexible sticks on top of the crosspiece, extending them beyond a nearby tree.

With some teamwork, we tightly bound the extended ends using strong cordage, anchoring them into the third upright Y-stick. That's when the structure began to take shape.

For added stability, I secured the first and last crosspieces, creating a solid tabletop foundation. Then, I carefully fit additional wooden pieces to form the surface. The narrower end, nestled closer to the tree, formed a sharper V-shape, while the wider section attached to the open Y-sticks created a spacious tabletop.

This was about more than building a table. It was about crafting a space for connection and creativity in the outdoors. Try it and experience that for yourself.

Reuben Bolieu is a passionate adventurer who explores remote places across the globe. He shares his expertise in survival techniques and woodcraft through his acclaimed writing, photography, and knowledge in survival classes and outdoor magazines.

THESE PROJECTS LOOK SIMPLE, BUT WORK AMAZINGLY WELL, EVEN LONG TERM!

Leaving the support poles longer allows for hanging other tools, such as a saw or kettle.

A 3D-printed tackle box used by the author's friend.

21ST CENTURY DIY

Make your own gear from the ground up

BY TIM STETZER

BACK IN THE DAY, HOMEMADE GEAR MEANT EITHER MAKING THINGS YOURSELF, OR ADAPTING OTHER PRODUCTS TO CREATE WHAT YOU NEEDED, SUCH AS THE CLASSIC ALTOIDS TIN SURVIVAL KITS.

It was fun and economical to make do with what you had on hand. But what if you could create refined versions of what you needed in your own home with the press of a button? With 3D printing you can easily do just that.

HOME 3D PRINTING

In recent years, 3D printers have come down in price enough that they're becoming a household staple. People use them for craft projects, printing game miniatures or cosplay props, or making more serious stuff like parts and tool prototyping.

To get started, you need three basic things: a printer, the right software and filament. There are many options available for all three categories so I'm going to touch on the basics. It will give you a starting point, but it's a subject you can easily do a deep dive into if you become interested.

PRINTERS

There a lot of printers on the market these days. I have experience with a couple of them. They sit at either end of the price spectrum for home users. The first one I had was the Creality Ender 3. The Ender 3 in its various configurations is the workhorse of the 3D printing field. It's one of the most common printers you'll see folks using. The base model starts right around $170.

IF YOU CAN'T SWING THE COST OF A 3D PRINTER, CHECK YOUR LOCAL LIBRARY. MANY OF THEM HAVE MAKER SPACES WITH 3D PRINTERS AVAILABLE.

It's the Lego of 3D printers, as there are myriad factory and aftermarket accessories for them. You can even print a bunch of upgrades yourself once you have the printer. The downside is that it comes unassembled so you need to put it together, which can be a little tricky. In its base form, you'll need to put your 3D print files on an SD card and plug them into the printer to do your prints. Wireless upgrades are available but involve extra parts and money.

Tons of folks use the Ender 3 with great results, but I struggled a bit in my setup and use. After a recommendation from a friend, I picked up a Bambu P1S printer. The P1S is a big jump over the Ender 3. It's a lot faster, and the version I got comes with a fully enclosed case. That keeps heat in while printing and dust and crud out. It works out of the box on your wireless network, too. You can even send file right from your phone to the printer. I've sent jobs to home while I was at work so that they'd be finished when I got home. I found that it tends to be more

3D printers are now affordable and easy to use. Making your own outdoors gear at home is easy and inexpensive, after the initial printer investment.

forgiving as well, and I've had much better luck getting good prints out of it. Bambu says you can be printing within 15 minutes of having the printer out of the box, and that was pretty much true.

You can also do multicolor prints on the P1S with the addition of the optional Automatic Material System (AMS) unit. The AMS will hold up to four different colors or types of filaments and lets you swap back and forth between materials, or do multicolor prints. The P1S is $499, or $699 with the AMS as a bundle. So, it's easier to use and has upgraded features, but it costs more than twice as much as the base Ender.

SOFTWARE

The printer is only as good as the files you feed it. To do that you need what's called a slicer program. A slicer is basically a program that takes a 3D file and preps it for printing on your particular machine. The most common 3D file types are typically STL, OBJ, 3MF and AMF. I tend to see STL and 3MF more than the others.

The most common slicer programs are Ultimaker Cura, PrusaSlicer and Bambu Studio. The Bambu slicer is native to the Bambu printer series. Ultimaker and Prusa can generally be used with whatever printer you have. The slicer lets you import a file and adjust the size and settings. You use it to prep your file and tweak the settings for your printer and filament types. Without getting into too much depth, this is where you determine if supports are needed for a project and what type to apply, among other things.

As with anything new, there is a bit of a learning curve with the various slicers. Some files import and slice easily and print with no issues. Others need some tweaks. There are a lot of tutorials online for the various programs and printers, though, to help you through the rough spots.

FILAMENT

Filament is the material you use to print with. It generally comes in spools of 1.75 mm-thick polymer "wire." The average spool size is 1 kg (2.2 pounds) in weight. Filament comes in a wide variety of material types and colors—everything from translucent materials and glow in the dark

The author printed a field repair kit that consisted of a spool for paracord along with an insert to hold duct tape.

There are a number of takedown saw models available that use jigsaw or Sawzall blades. They make for light, compact saws for your pack or survival kit.

There is a wide variety of filament types and colors to choose from, depending on what kind of project you're printing.

to metallic is available. You can even get wood-based filament, or flexible filament.

PLA (polylactic acid) is the most common filament for 3D printers. It's a good base plastic that generally prints well and is suitable for projects that don't need super-high strength or heat resistance.

A spool of PLA typically goes somewhere around $20, depending on the brand. Prices go up for stronger or more exotic materials, with single spool prices sometimes getting up to about $60. The good thing is you can get a lot of prints out of a 1 kg spool, and you don't need exotic materials for a lot of the things you'll likely create with it.

FILES AND PRINTING

Once you have your printer, what can you actually do with it? Well, nearly anything you can imagine. Chances are if there's something you're interested in, there's a file available to print it. If there's not, you can design it yourself—if you happen to be handy—with Tinkercad, Blender, Fusion 360, SolidWorks and FreeCAD.

There is an amazing number of files online. They're frequently free or are very inexpensive. A basic Google search for a 3D file of whatever you're looking for will generally give you a bunch of options. The three places I typically start with when I look for files, though, are printables.com, thingiverse.com and makerworld.com.

I've printed a lot of outdoors gear. There is an amazing amount of whistle files available and I've printed a number of them. I stash them in kits and bags, and have given out a bunch, too. They cost pennies to print and compare very favorably to the better factory

FILAMENT TYPES AND USES

Use the right materials for your projects. I mentioned PLA as being the most common filament used in 3D printing. That's true, but there are a lot of other options out there as well. PLA+, sometimes referred to as PLA Pro, is a variation of PLA that is typically stronger. It's a good choice for outdoors gear. It typically still prints well, and it doesn't cost much more than standard PLA.

If you want increased strength as well as some better heat and resistance, something like PETG, ASA or nylon are good choices. PETG is stronger and more flexible than PLA, and has better UV resistance as well. I use a fair bit of it in my prints. Like PLA+, it's pretty affordable. ASA filament is derived from ABS plastic. It has excellent UV, weather, mechanical, and thermal resistance. It runs a little more than PETG or PLA +, but it's a great choice for gear that will see heavy use or be exposed to the elements.

If you want even more strength and rigidity, you can use carbon fiber filaments. Generally, they're mixed with a base of PLA, PETG, ASA or nylon material. Carbon fiber offers excellent thermal resistance as well as decreased weight. Carbon fiber-infused filaments will typically cost a little more than other filaments.

TPU—thermoplastic polyurethane—is a soft and flexible filament with high impact resistance. It's rubber-like and can be used to print O-rings and even slingshot bands. TPU is more specialized than the other filaments and does cost a bit more as well. It's likely only going to be used for certain parts, though, so a spool will probably last you longer than other filaments that will be used for bulk printing.

PLA and PLA+ work fine for many applications, but depending on what you're making, you may want to explore tougher materials. Just make sure to check the specs on your printer and make sure it can handle the filament you want to use. Often you need upgraded nozzles to print ASA and carbon fiber filaments.

whistles I have.

I've also printed a number of match cases to use for actual matches or to store tinder. Other sorts of cases for fire-starting or survival gear are available as well. Battery cases are also a commonly found file. Tick removers are another thing for which there are a lot of files available. There are a number of compact saw files available that use jigsaw or Sawzall blades. These make handy, lightweight and compact trail saws. Tent stakes, rope tensioners and cord holders also abound, as do spools for wrapping paracord and duct tape for field use and gear repair. There are a lot of options for camping utensils, salt and pepper shakers, and the like. There's a lot fishing gear available as well, such as mini tackle boxes and various types of hand reels.

WHY 3D PRINT?

Why 3D print rather than just buy gear? Well, it's fun to do. Finding a project and literally watching the printer build it before your eyes is pretty neat. It's also generally cheap. Filament is pretty inexpensive, and you can get a lot of mileage out of it, especially for small projects like whistles and rope tensioners.

The other thing is you don't have to leave your house to get a piece of kit, or wait for it to arrive in the mail. If you have a trip planned and are missing a piece of gear, you can print it yourself, and likely do so for less than you'd pay for the item.

While it may not have the same rustic feel of repurposing that old tobacco tin and sewing machine bobbin, it's a level of self-sufficiency that I think our ancestors would still appreciate.

3D PRINTING REALLY BRINGS THE DIY MINDSET FORWARD INTO THE 21ST CENTURY!

BLACK
FIRE START
petroleum jelly
equate

Plans for match cases and containers that can be used for fire-starting gear, first-aid kits, or just about anything else are plentiful online.

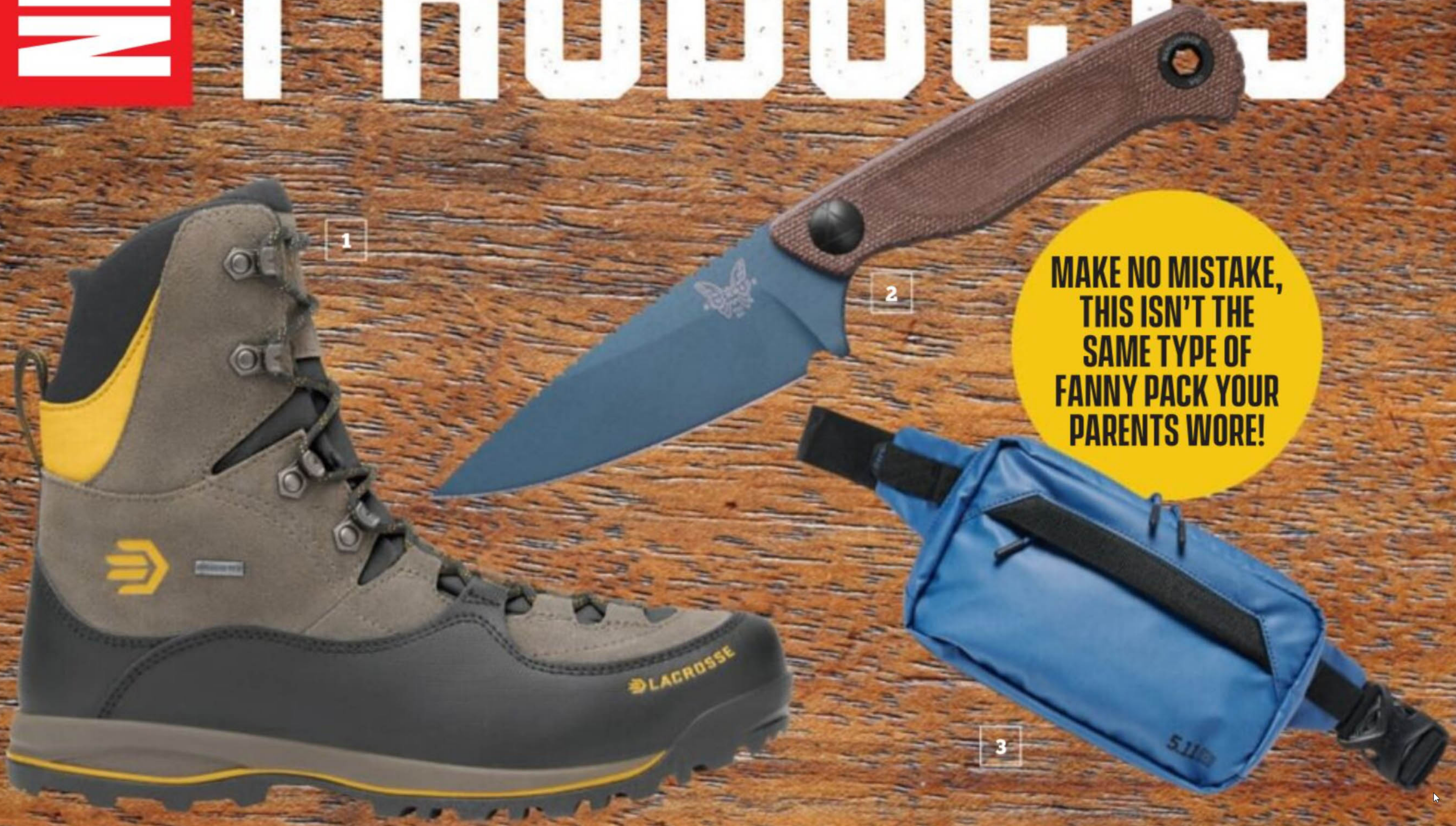
Tim Stetzer lives in western Pennsylvania with his wife, two kids and too many cats. He has over two decades of law enforcement and criminal justice experience, and as a police academy instructor. He is also a veteran of both the Army and Air Force Reserves. He's been an avid outdoorsman since his youth in Boy Scouts, where he first became interested in knives. Tim has written for various gun, knife and outdoors publications since 2006 and has designed, and helped design, a number of custom and production knives during that time.

CHAPTER 4

EQUIPMENT

HUMANS INVENTED TOOLS FOR MANY REASONS, INCLUDING THAT THEY'RE FUN TO PLAY WITH!

NEW PRODUCTS



MAKE NO MISTAKE, THIS ISN'T THE SAME TYPE OF FANNY PACK YOUR PARENTS WORE!

1

URSA ES

ES stands for Early Season, signifying that this is the perfect boot for fall weather, as unpredictable as it may be. It's lightweight, agile and breathable, helping you stay nimble in the worst terrain as you track your prey or just see where the next trail leads. With a suede upper, GORE-TEX waterproof liner and Vibram MegaGrip outsole, this boot will hold up for hundreds of miles.

$250
lacrossefootwear.com

2

DACIAN

We love pocket-carry fixed blades, and the Dacian from Benchmade really scratches that itch quite well. Featuring MagnaCut steel and a spear-point blade profile, the knife is just about bombproof. The brown Micarta handle has lateral grooves for comfort in any grip position. The scout-carry sheath combines classic leather with a Boltaron insert for retention.

$300
benchmade.com

3

ALLHAULA WAIST PACK

When you want to carry just the essentials, this 2L waist pack keeps everything close while keeping your hands free. It has a spacious main compartment with internal organizers. There's plenty of space for your phone, keys, pocket knife, fire starter and other necessities. Front and rear zippered pockets keep everything where you want and let's you customize the load.

$50
511tactical.com

The latest and greatest gadgets and goodies

BY BSG STAFF

4
5
6
CAMPMEISTER DELUXE
DAKINE

GETTING A DECENT NIGHT'S SLEEP IS IMPORTANT WHEN YOU'RE OUT IN THE FIELD!

4

CAMPMEISTER DELUXE PAD

With a 3.5-inch thick pad and 4.25-inch outer chambers, you'll sleep comfortably all night long. It features a high-volume dual valve that allows for easy and efficient inflation and super-fast deflation, so you can break down camp and get back on the trail quickly. It includes a pad inflation sack, storage sack, replacement valve seal and repair patches.

$250

bigagnes.com

5

CARBON EXPLORE SERIES TREKKING POLES

Trekking poles are incredibly handy when you are out exploring rough terrain. This set is super light and rugged, featuring extended EVA foam grips for comfort. They're easy to adjust and have aluminum flip-locks. The set includes snow and trekking baskets, so you'll be ready to go no matter what the weather brings.

$130

dakine.com

6

GRIM SURVIVAL PLAYING CARDS

Buy one deck or get all nine in a bundle pack. These cards help you learn about survival in several different categories while you play poker, rummy or your game of choice. Each deck is filled with illustrated projects, tips, advice and more. The more often you play with them, the better you'll retain the information. Gamble with the cards so you won't gamble with your survival.

$25/deck

grimworkshop.com

USE THIS FOR CAMPING AS WELL AS SNUGGLING UNDER THE STARS AT HOME!

7

STAKEOUT

Here is a multitool designed specifically for camping. It includes a 2.2-inch plain-edge knife, scissors, saw, awl, stake puller and so much more. Closed, it measures 4.5 inches and it weighs just 3.32 ounces. It's easy to pack and keep at hand, so you'll have it when you need it. A sturdy carabiner is built right in, so you could even just clip it to your backpack.

$55
gerbergear.com

8

DREDGE

This full-size shovel folds for storage, going from 45 inches down to 25 inches. It's perfect for removing stones from the tent location, fire pit maintenance, digging rainwater trenches and so much more. At nearly 7 pounds, it has enough heft to get the job done. Add it to your camp gear or your vehicle recovery kit so you'll be ready for anything every time you hit the road.

$160
gerbergear.com

9

PERFORMANCE SHERPA FLEECE THROW

This light, easily packable blanket is perfect for cool nights on the trail or in the backyard. It's soft against the skin and warm enough to chase away the autumn night chill. It measures 75 inches by 52 inches, so there's enough blanket to wrap around yourself or snuggle with a loved one. It's available in green, gray or blue.

$130
dakine.com

10

THIS KNIFE IS A BIT LARGER THAN IT LOOKS, BUT THAT'S NOT A BAD THING AT ALL!

12

11

10

CROOKED RIVER

This new iteration of the Crooked River from Benchmade features a stylish look. It pairs black canvas Micarta with a burnt copper bolster. The MagnaCut steel blade is a full 4 inches long, while the knife has an overall length of 9.3 inches. This is a knife that's designed and built for real world use and abuse. It fills the hand and will tackle anything you throw its way with a smile.

$340

benchmade.com

11

COPPER SPUR UL2

The Copper Spur is an ultralight backpacking tent that's been around since 2008. However, thanks to Big Agnes' proprietary HyperBead fabric, the latest iteration is lighter and more waterproof than ever. It has a high-volume, freestanding design that provides tons of interior room. Multiple gear pockets and generous vestibule space make this an excellent shelter option for backpackers.

$550

bigagnes.com

12

ALLHAULA 45L DUFFEL

The AllHaula Duffel 45L is exactly what you need when you have to carry everything up to and including the kitchen sink. It doesn't hesitate to tackle the roughest terrain or the worst weather conditions. A storm flap protects a wide-mouth opening. Loading is fast, easy and frustration-free. Compression straps keep the load stable, no matter where you go.

$180

511tactical.com

DON'T OVERLOOK THE IMPORTANCE OF ADDING A FEW BASIC KNOTS TO YOUR SKILL SET!

CORDAGE

This simple string offers more than most realize

BY MICHAEL D'ANGONA

Not all cordages are made equal. Be sure you know their limitations as well as their strengths.

THERE'S ALWAYS SOMETHING TO SECURE WHEN IN THE DEEP OUTDOORS. WHETHER YOU RE TYING SAPLINGS FOR SHELTER CONSTRUCTION, REPLACING A FRAYED TENT LINE OR RESTRINGING YOUR BOOT LACES WITH A SUBSTITUTE AFTER AN UNEXPECTED RIP, THE COMMON DENOMINATOR OF ALL THIS IS CORDAGE.

Having a reliable length of cord on hand is not just a convenience when out in the wild—it's an absolute necessity for any unpredictable problems that may arise. However, not all cordage is the same. From tensile strength to material and composition, to interior specialty strands, special features and even color options, the category is much vaster than most people may think. Here, we'll unravel all the cordage characteristics that you'll need to make a wise choice for all your paracord needs.

PARACORD IS KING

At the sheer mention of the words survival, outdoors and cordage, what usually comes next is the word paracord. Paracord is the most widely employed type of cordage for prepping, bug-out bag stocking and all-around campsite use. Originally, this cordage was used in the suspension lines of parachutes, hence its prefix, and was (and still is) a staple in the military forces today. Paracord is classified into multiple categories—Type I, IA, II, IIA, III and IV—distinguished by their relative tensile strengths that range from around 90 pounds to a staggering 750 pounds. Always keep in mind that the noted tensile strength is for a static weight load. It's not meant for

Paracord bracelets can be an easy way to carry extra cordage with you.

dynamic movement or for supporting a human being. Also, the paracord's strength can be weakened considerably (anywhere from 50% to 80%) when the cordage is knotted, frayed over time, or exposed to heavy moisture or UV light.

INNER GOODIES

From the outside, paracord appears to be unremarkable with no distinguishable characteristics. However, the inner material could be surprising to most people if they are not in the know. First, traditional 550 paracord has seven inner strands. Each strand can be separated and used independently for needs that don't require the full tensile strength of 550 paracord. On average, the working strength of one inner cord is between 25 and 35 pounds. Separating the strands naturally increases your usable length by a considerable amount. This is advantageous when your cordage length is limited and you need to use every available foot you have. These inner strands can be used for a variety of needs, including binding materials for shelter construction, replacing shoelace strings, rigging small game traps and even as makeshift fishing line. Some types of paracord have specialized inner strands that offer specific survival applications. These include snare wire, for hunting small game, tinder cord for fire-starting, and fishing line for catching dinner when you lack poles or nets.

OUTER FEATURES

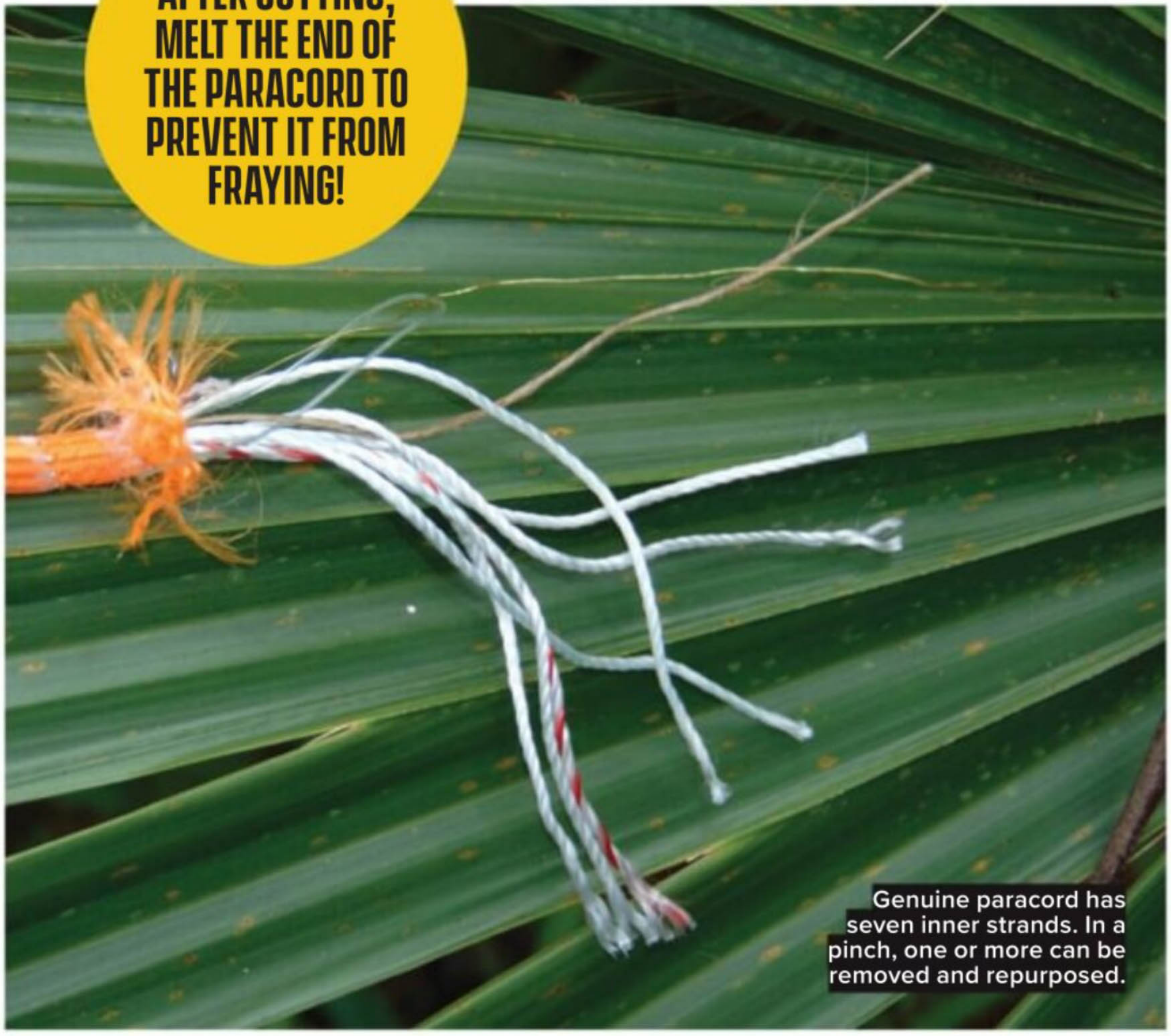
When choosing paracord, it's not only what's on the inside that matters, but on the outside as well. Some specialized paracord (mainly in the 550 strength) offers a glow-in-the-dark outer casing. This unique paracord is especially useful when used as tent guylines. When you're up and about in the darkness while camping outdoors, the glowing cordage prevents accidental tripping and entanglements. Reflective 550 also assists with this issue; however, it doesn't glow, but it's effective in the daytime. When overhead sunlight hits the metal-like outer casing material, it produces a glistening effect that allow you to avoid the staked-down guylines. Additionally, 550 paracord is available in dozens upon dozens of colors, as well as in various patterns and camo styles.

BEWARE OF IMPOSTERS

Like nearly everything out in the world, there is quality and then there are cheap imitations jumping on the bandwagon, and paracord is no different. As the popularity of cordage increased, so did the number of companies making it and promoting it in a wide variety of ways.

If you truly want it as a novelty only, such as a bracelet to match your outfit, there is certainly no harm in that. However, you must be aware that it will not stand up to the specifications of true 550 or greater cordage. In addition, companies that promote such cordage as super-strong or heavy-duty survival use without specifying the strength

Cordage is handy when it comes to erecting a shelter, especially if a tent line snaps.



AFTER CUTTING, MELT THE END OF THE PARACORD TO PREVENT IT FROM FRAYING!

Genuine paracord has seven inner strands. In a pinch, one or more can be removed and repurposed.

limits of the cordage are misleading the public in a roundabout way and should be avoided. Remember, not all paracord is created equal. Know what to look for before you buy and make an educated choice based upon your personal needs.

INTEGRATION WITH GEAR

One area involving paracord that has expanded greatly over the years is its integration into everyday items, lifesaving gear, and over-the-counter novelties. Braided paracord can be seen in everything from cup holders to gear pouches and those ubiquitous survival bracelets found nearly everywhere you turn. On the practical side, these are very useful. They exist as both a useful object of some sort, but also as a reserve for cordage when or if you need it in an emergency. Basically, just unweave it and it's good to go. However, one should be mindful that not all braided paracord items are of equal tensile strength. The inexpensive bracelets sitting on the counter of your local store are most likely not true 550 cordage and just a very weak imitation, not applicable for some survival applications. Be sure to note the pound limitations on the packaging.

TYING UP LOOSE ENDS

Cordage may not be at the top of the list when assembling a bug-out bag or emergency kit, but it's more valuable than you may think. What sets it apart from other pieces of gear is its incredible versatility. It can help in the areas of shelter building, hunting and fishing, first aid, clothing and tent repair, and campsite defense and protection, to name a few. Paracord, in particular, is that one outdoor item that you won't think about until you need it. Thankfully, you have plenty of styles, colors and special features to choose from that will get the job done right.

KEVLAR CORDAGE

During your survival prep, you may come across Kevlar cordage. This distant cousin of paracord offers numerous survival uses thanks to these four incredible synthetic fiber characteristics.

High Tensile Strength
On a weight-for-weight basis, Kevlar is significantly stronger than steel by a factor of at least five times and often more. This makes it ideal for supporting heavy loads or when used as animal snares.

Heat Resistance
Working with Kevlar around a campfire is no problem at all, thanks to its flame resistance and ability to withstand high temperatures.

Durability
Kevlar is tough enough to handle almost anything nature throws at it, including abrasions, chemical deterioration, UV light damage and moisture.

Very Low Stretch
Kevlar is excellent for securing broken tools and tying down gear to vehicles and packs. It's low-stretch characteristic allows everything to stay in place at all times.

There's just something special about meals cooked and shared outdoors.

CHOW TIME

Cookware that specializes in outdoor functionality

BY MICHAEL D'ANGONA

EATING A MEAL UNDER THE STARS WITH YOUR CAMPFIRE BLAZING IS A WONDERFUL EXPERIENCE. HOWEVER, IF YOU DON'T HAVE THE PROPER GEAR, YOUR MEAL PREP CAN BE MORE OF A CHORE AND ONGOING HASSLE THAN A REWARDING AND RELAXING EXPERIENCE.

You'll need the proper outdoor-centric cookware, utensils and tools to both prepare your meal and serve it to yourself and others in your group. On the market today are numerous options that put practicality and versatility at the top of the list. Such amenities include cookware made for high temperature use, nesting capabilities for easy carrying, and space-saving multitools for minimalist travel. No matter your needs, there's a item that will make your next outdoor meal a pleasure to prepare.

10-PIECE CAMPING COOKWARE MESS KIT

When space is at a premium and you need to cook a quick dinner, then this mess kit is for you. Consisting of 10 pieces, including a nonstick pot and pan, lid, two BPA-free bowls, a folding stainless steel spork, soup spoon and spatula, you'll have what you need for food prep when on the go. Additionally, this compact assembly offers a convenient carry bag and recipe e-book. Best of all, the components nest perfectly to create the smallest footprint when traveling or when stored away. FDA-approved, nontoxic and BPA-free, this mess kit allows safe eating when your kitchen is far away.

Specifications

- Nontoxic anodized aluminum cook set
- Easy cleaning and storage
- Collapses down to save space
- Ideal for hikers or backpackers
- Includes nylon carrying bag

$27
mallome.com

TABLEWARE SET

This tableware kit offers everything you need for your family or group of friends when it's time to eat in the great outdoors. This set for four contains a rectangular plate, bowl, cup and knife, spoon, and fork, ready to serve breakfast lunch and a hearty dinner. All items are dishwasher safe, BPA- and PVC-free, are constructed of bio-infused plastic (containing 50% wheat straw), and all store easily inside the included storage container. Don't rely on flimsy disposable materials when you can have sturdy and reliable tableware at your disposal.

Specifications

- Full tableware for four people
- Compact and easy to carry
- Bio-infused plastic contains 50% wheat straw
- All dishwasher-safe items
- BPA- and PVC-free

$50
coghlans.com

COMPLEAT GRIDDLE

Going simple is sometimes the best way to go, and with this versatile griddle nearly everything can be on the menu. Featuring an extra-large, 11-inch cooktop, enjoy diverse meats, fish, poultry and vegetables, with plenty of room to spare. Its silicone over-mold detachable handle allows your hand to stay cool even as your food sizzles inches away. Best of all, the handle and griddle clean easily and compactly store away until your next outdoor cookout. Nonstick properties, tall sidewalls to prevent spillage and even heat distribution complete this griddle's remarkable specs.

Specifications

- Large, 11-inch cooking area
- 8-inch detachable silicone over-mold handle
- Tall sidewalls to keep juices in
- Nonstick carbon steel surface
- Overall weight: 3.5 pounds

$76
gerbergear.com

COMPLEAT KNIFE SET

Make your campsite dining prep fast, easy and efficient with the ComplEAT three-knife set. Featuring three knives—one paring knife, one serrated utility knife and one chef's knife—you'll have the right tool needed to get the job done. All three knives offer German stainless steel stonewash blades with glass-filled polypropylene handles and are tough enough to withstand nature's worst. These kings of cutting are corrosion-resistant and dishwasher-safe, and come complete with individual sheaths and a polyester carrying case.

Specifications

- 4116 German stainless steel blades
- Glass-filled polypropylene handles
- Rubber overmold textured handle grip
- Corrosion-resistant
- Includes polyester webbing carrying case

$91

gerbergear.com

CRKT
EAT'N TOOL

EAT'N TOOL

A simple, yet effective design, the Eat'N Tool from CRKT offers on-the-go utensil use, no matter where you are in the world. The tool features an amalgamation of a fork and spoon that streamlines your camp utensil carry. Additionally, on its handle are additional tools, including two screwdrivers (that doubles as pry bars), three metric hex wrenches and a bottle opener. A convenient carabiner allows for attachment to your bag, pack or even belt loop. Small, lightweight and highly effective, the Eat'N Tool makes outdoor eating easy.

Specifications

- Spoon-and-fork combination utensil
- Overall length: 4 inches
- Lightweight, only 1.5 ounces
- Constructed of 3Cr13
- Includes convenient carabiner

$9

knifecenter.com

STRYKER CAMP STOVE

After a long hike, you're hungry and want to heat in a hurry. The Stryker Camp Stove can make this happen. Fueled by propane and designed to heat half a liter of water in two minutes, you'll enjoy your soup, freeze-dried meal or dehydrated dinner in no time flat. The stove comes complete with a three-leg stand, a pot, a lid and a mesh carrying bag. It's ideal for minimalist hikers and general outdoorspeople who travel light but want a hot meal at the end of a hard day.

Specifications

- Large 1.3-liter pot
- Heats water in less than two minutes
- Utilizes propane fuel
- Compact, lightweight unit
- Includes mesh carry bag

$115

campchef.com

CAMP CHEF
STRYKER

COMPLEAT CUTTING BOARD SET

This set offers both convenience and functionality when preparing meals at your campsite. Consisting of one bamboo and one polypropylene cutting board, a chef's knife, a paring knife and a useful storage tray, you'll have all your prep tools together in one secure unit. The ComplEAT set also features heavy-duty locks for secure carry, dishwasher-safe materials and high-quality German steel blades with sure-grip overmold handles. You'll be chopping like an absolute pro with this cutting board assembly with rapid cleanup and easy storage when done.

Specifications

- Highly portable, easy to transport
- Two-sided cutting boards with juice grooves
- 4116 German stainless steel knife blades
- Heavy-duty locks
- Dishwasher-safe construction

$117
gerbergear.com

PLASTIC SPORK

Sometimes simple is the way to go, and no other utensil exemplifies this better than this Spork from Mountain Warehouse. This one-piece, two-ended utensil offers three tools in one: a spoon, fork and knife-like serrated edge for hassle-free slicing. Its super-tough body is heat-resistant, dishwasher-safe and colored bright orange for easy location against nature's earth tone backdrop. An integrated carabiner allows for easy attachment to your packs, bags or belt loop.

Specifications

- Dishwasher safe
- Lightweight and easy to carry
- Heat-resistant
- Convenient dual utensil design
- Includes carabiner for easy carrying

$4
mountainwarehouse.com

GOURMET 11-PIECE KITCHEN SET

This 11-piece set contains everything you need for the perfect meal prep. From spoons, spatulas and whisks to a cutting board, scrubber, spice containers, camp towel and more, you'll have essential tools at your disposal to prepare a meal for yourself or your group. All items are designed to minimize space while maximizing efficiency in your outdoor kitchen. The entire four-person assembly is organized and secured within the included ballistic nylon carrying bag.

Specifications

- 11-piece utensil set
- Lightweight, just over 1 pound
- Waterproof spice holder
- Ballistic nylon zippered case
- Durable for regular outdoor use

$27
scoutshop.org

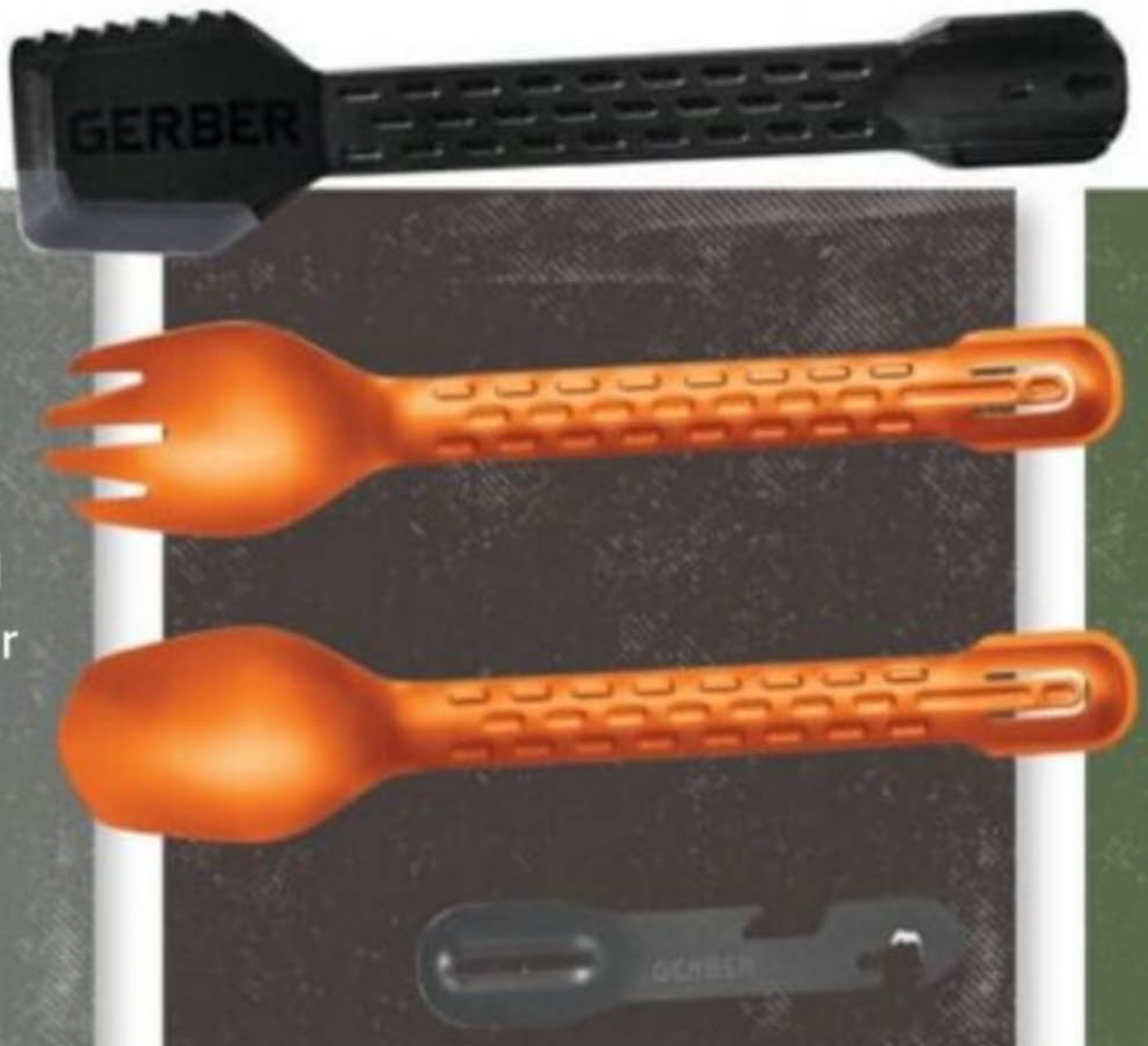
COMPLEAT COOK SET

Whether you're with your family or a group of friends in the outdoors, you all need to eat—and there is no better way to prepare a meal than by using the ComlEAT cook set. This set, by Gerber Gear, offers a full 16 pieces that run the gamut of your outdoor cooking needs, including a saute pan, stock pot, accompanying lids, bowls, plates and a hot plate. All items are constructed for hearty outdoor use, with 3-ply base construction for even heat distribution on the saute pan and stock pot. Best of all, the entire assortment nests together and can be carried easily with the included packable case.

Specifications

- Large 16-piece assortment
- Three-ply base for even heat distribution
- Nesting design for easy carrying and storage
- Specifically designed for outdoor cooking
- Convenient carrying and storage bag

$220
gerbergear.com



COMPLEAT UTENSIL SET

Consisting of a dual-sided spatula, a long-tined fork, a deep basin spoon and a four-function multitool, you'll have everything you need for dinner. Additionally, when you clip together the spatula and the spoon or fork, you'll get a great pair of tongs. The multitool offers a package opener, can opener, bottle opener and vegetable peeler. All utensils nest easily when not in use.

Specifications

- Four-piece set
- Constructed of anodized aluminum (fork and spoon)
- Corrosion-resistant
- Safe for high temperature use
- Snaps together to form convenient set of tongs

$37
gergergear.com

STAINLESS STEEL CUTLERY SET

When you want the look and feel of true stainless steel utensils, you need to turn to this incredible traveling trio. This set includes a fork, spoon and serrated knife that interlock to stay firmly in place when traveling, yet easy to separate when the dinner bell rings. Each utensil is highly durable, corrosion-resistant and washes clean easily after every meal. At just 3 ounces for the set, you won't feel the weight of this mealtime necessity even in the smallest of packs or bags. Eat civilized, even when in the deep outdoors.

Specifications

- Stainless steel construction
- Lightweight, easy to pack
- Interlocking design keeps utensils secure
- Includes fork, spoon and serrated knife
- Overall weight: 3 ounces

$11
mountainwarehouse.com

The CAS Iberia Demko Rhino Hybrid by APOC has a 6-inch handle and blade made from D2 steel with an overall length of 12.75 inches.

WILD LIKE ITS NAMESAKE

Discover the cunning nature of the Rhino Hybrid

BY REUBEN BOLIEU

IN A WORLD CLUTTERED WITH ONE-TRICK TACTICAL TOOLS AND FANTASY BLADES MASQUERADING AS FIELD-READY WEAPONS, THE CAS IBERIA DEMKO RHINO HYBRID BY APOC CUTS THROUGH THE NOISE–LITERALLY AND FIGURATIVELY.

TECH SPECS

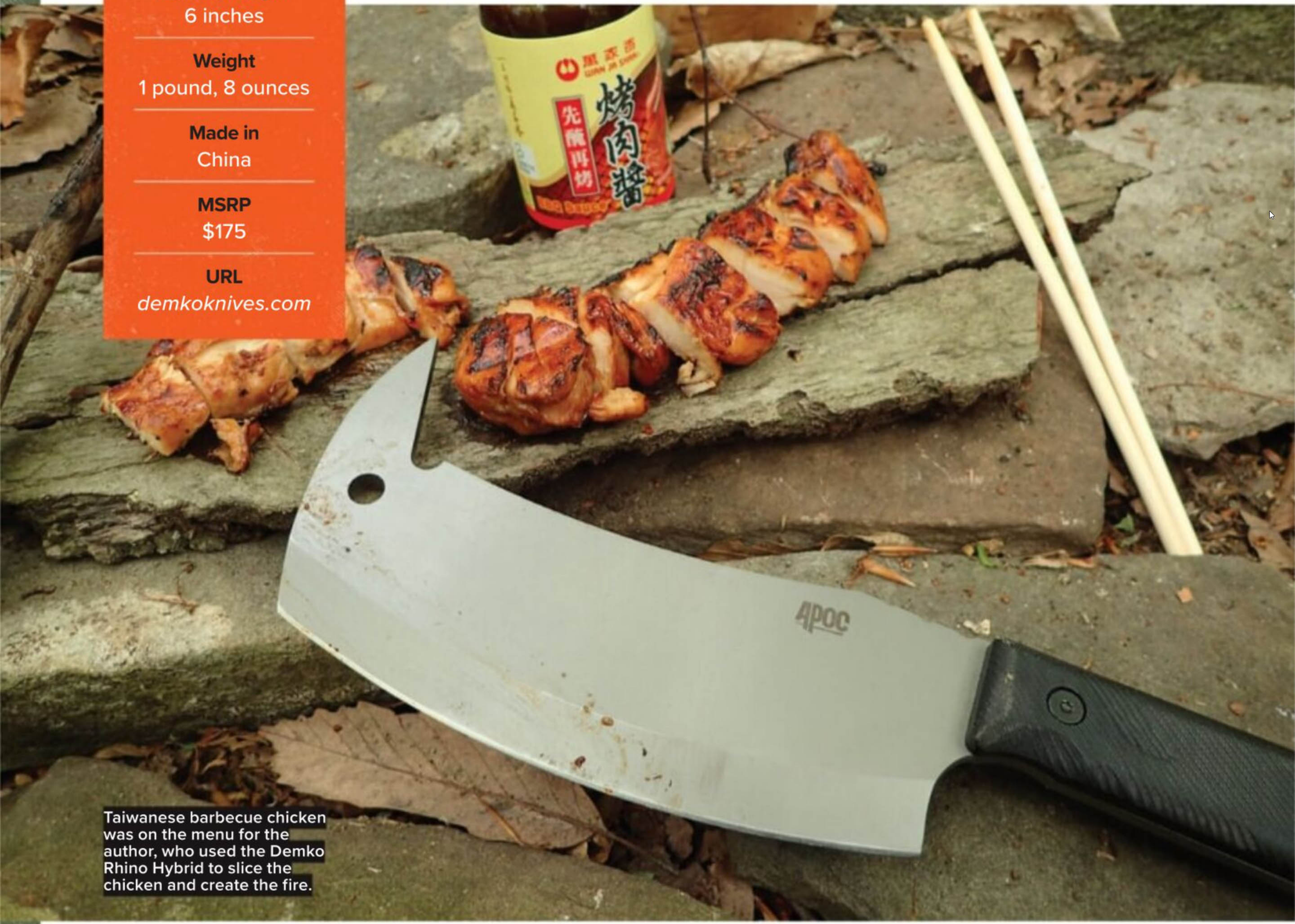
Overall	12.75 inches
Blade Length	6 inches
Blade Steel	D2
Finish	Titanium-Coated D2
Thickness	5.5 mm
Handle Material	G10
Handle Length	6 inches
Weight	1 pound, 8 ounces
Made in	China
MSRP	$175
URL	*demkoknives.com*

Designed by the legendary Andrew Demko, this hybrid strikes a rare balance between brute force and refined engineering, channeling martial heritage into a modern-day utility machine. Whether you're navigating post-collapse scenarios, rehearsing for the unexpected or just craving a blade that can back its look, the Rhino Hybrid is more than ready to carry the weight.

THE NITTY GRITTY

APOC doesn't just follow tradition—it redefines it. With the Demko Rhino Hybrid, the brand delivers a tool that defies categorization. Machete? Knife? Cleaver? Ax? It's all of them, fused into a single powerhouse designed to tackle whatever you throw its way.

Andrew Demko has designed a hybrid blade crafted from durable D2 steel, featuring a robust titanium coating that ensures long-lasting resilience. With a blade thickness of 5.5 mm, it effectively slices, batons, feathers and hacks with ease, making it ideal for heavy-duty tasks. Weighing in at 1 pound and 8 ounces, its balanced construction minimizes fatigue, allowing for extended use without discomfort. The overall length of the knife is 12.75 inches, with a blade length of 6 inches and a handle also measuring 6 inches. Additionally,



Taiwanese barbecue chicken was on the menu for the author, who used the Demko Rhino Hybrid to slice the chicken and create the fire.

the reinforced pick at the spine provides enhanced striking power. It's sharpened to a fine point, great for embedding and hauling chunks of processed wood, digging, or raking debris.

The full-tang handle is wrapped in contoured G10 slabs, offering both durability and comfort. Rounded knurling on the spine enhances control, while a lanyard hole provides extra grip security.

It comes with a MOLLE-compatible sheath, which makes it convenient for survivalists, campers and adventurers who value preparedness and adaptability. The Kydex sheath features a snap belt system to keep the blade accessible while ensuring it doesn't interfere with your movements.

Batoning wood with the Demko Rhino Hybrid was challenging due to the spike, which required us to be mindful of the wood's size.

PROCESSING FIREWOOD REQUIRES A RUGGED TOOL, AND THIS ONE PERFORMED WELL!

TEST RUN

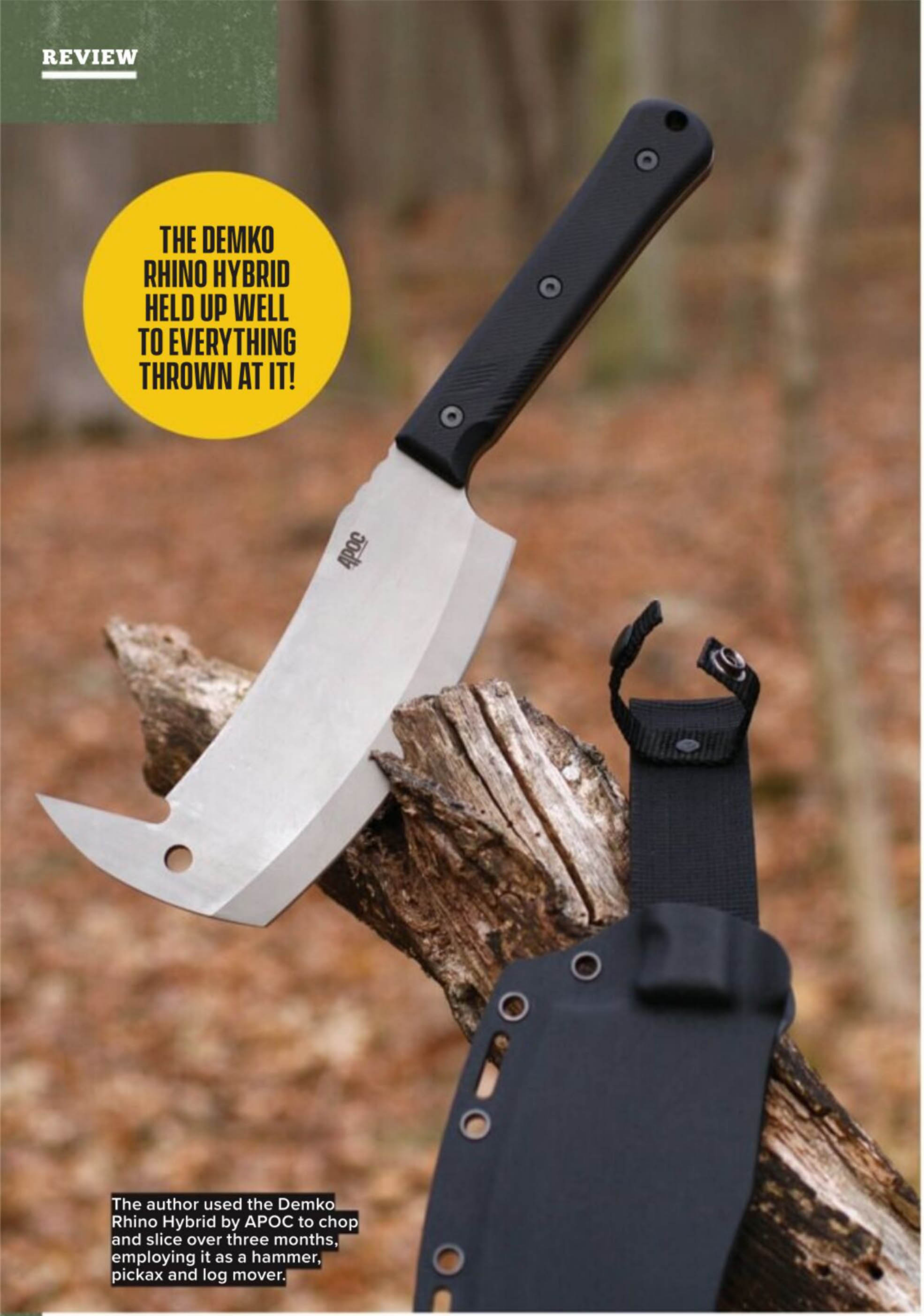
I wasted zero time getting out in my local woods in the Northeast to give the Rhino Hybrid a test run. Spring was in full bloom, and there was a lot of dampness due to constant rain. This meant it was time for spring cleaning. Wet sticks and rotten wood, which would harbor ticks, were strewn across my semipermanent camp. I used the Rhino Hybrid to rake and drag debris away from my cooking area. The spike worked exceptionally well and was effective for stabbing and relocating rotting wood chunks.

Due to the wet wood I harvested previously, much of it needed to be split to burn effectively in the small wood stove. I used several Nata knives throughout the winter months, and the Rhino Hybrid fit into the familiar zone. It's not too different from a Nata, except for the spike and continuous belly. I had several short wooden rounds I sawed months ago, and splitting them one-handed wasn't tricky. Although the Rhino Hybrid wasn't as thick and heavy as the Nata knives I'd been using, it had no trouble splitting oak, maple and poplar wood.

I split longer pieces of wood with the Rhino Hybrid, just as I would using a hatchet. Contact splitting was safe, as the long handle allowed my support hand to hold the wood out of the danger zone. The added weight of the spike aids in splitting and contributes to the tool's overall power.

CAMP KITCHEN

With the continuous curve of the blade, there's no way the Rhino Hybrid could escape kitchen duties. Slicing meat and veggies was a breeze in a chef's pinch grip. Keeping it simple during the warmer months, cooking outdoors, I stuck to



THE DEMKO RHINO HYBRID HELD UP WELL TO EVERYTHING THROWN AT IT!

The author used the Demko Rhino Hybrid by APOC to chop and slice over three months, employing it as a hammer, pickax and log mover.

slicing sausages, hot dogs, ham and Spam. I also sliced chicken for kebabs over the metal colander stove and grill. I didn't chop through chicken or pork bones, but I wouldn't doubt the Rhino Hybrid edge for that task. Perhaps in the future I will test that theory.

For the most part, the bulk of the work from the Rhino Hybrid involved keeping the wood stoves and campfire well fed, as well as crafting the pot-hanging system and fire/log poker for the five days in the Adirondack Mountains.

SURVIVING THE ADIRONDACKS

The Demko Rhino Hybrid was my primary tool for heavy lifting during a recent epic floatplane trip. The place: the Adirondacks in New York for camping, canoeing and fishing. I went with a solid group of outdoorsmen who had a plethora of cutting tools. However, nothing was as interesting as the Rhino Hybrid, mainly because of the spike.

After a successful water landing, it was time for us to make camp. The idea was to set up camp, gather wood and make some implements that would make the next five days of camp more enjoyable. These tasks would require a few tools. A small Fiskars retractable saw, a Knives By Nuge Nessmuk-style pattern, and the big dog, or should I say, Rhino. Sawing and chopping with the Rhino Hybrid got me several stakes for my 10x10 tarp. Nothing fancy for real-world camping when making stakes: An angled chop for driving one end into the ground and a flat top for pounding will work as well as any complicated stake. I used the Rhino Hybrid to hammer the stakes into the ground firmly enough that I could step on them with my foot. Doing it that way is safer for me and the tarp than using a sharp tool.

The next task was making camp kitchen tools. A long, 5-foot forked stick was going to be our fire poker, with added features. The Rhino Hybrid chopped one end flat, and then I used a lighter touch to shape the sides, creating a chisel end. I made the chisel shape to lift lids from our cookpots and to poke logs. The opposite end had a forked end that I cut with a saw. The Rhino Hybrid chopped the forked piece so it was easier to grip logs and move them around the fire. This forked end was also used to rake coals and retrieve heavier pots from the fire. The chisel end was good at prying off bark from a dead yellow birch we had in camp. The idea for this tool goes back to *Woodcraft and Camping* by George Washington Sears, better known by his pen name, Nessmuk. He mentioned that such a tool would be very valuable in his camps.

I roughed out the pot-hanging system using the Rhino Hybrid by chopping the Y-sticks. Then, I cut the bottoms of the stakes at a steep angle so they could easily pierce into the ground. A bit of light hammering on the top of the Y-sticks with the Rhino Hybrid secured them in the ground. The pot hangers were chopped to size and trimmed with the Rhino Hybrid. However, my sheath knife did the notch carving. It was a team effort from the tools, with the Rhino Hybrid often taking the lead.

I procured a stout baton and used it to split wood for the fire, safely. The Rhino Hybrid took a great deal of use and borderline abuse. The D2 steel didn't fail, even when I batoned a stubborn log on a rock to improve energy transfer, since the ground was soft and wet. It got a little banged up, but it was an easy fix. I used a Wazoo Gear Viking Spark pendant during the Adirondacks trip for all my tools. The ceramic helped keep the dings down to a minimum on the Rhino Hybrid. Meanwhile, the whetstone kept the edge keen. Keeping tools honed prevents the need to go to harsh stones, especially on hard-to-sharpen steels.

WHO IT'S FOR

This is a blade for those who see tools as lifelines, not decorations. It suits survivalists, bushcrafters, stage combat trainers and anyone who demands real-world function in a blade that doesn't blink at a challenge. If you're the type whose gear must earn its keep or it stays behind, the Rhino Hybrid belongs in your loadout.

ANDREW DEMKO

Andrew Demko is a leading knife designer known for combining strength and innovation. His journey began in 1988 when he forged his first chisel. He rose to prominence with Cold Steel, creating effective locking mechanisms like the Tri-Ad Lock, Scorpion Lock and Shark Lock.

In 2020, he founded Demko Knives with his brother John and maker Mike Wallace, launching the popular AD-20.5, which introduced the Shark Lock to a broader audience. Demko's knives are designed for functionality, performing like fixed blades while incorporating unique features that appeal to collectors.

Contact splitting was easy, thanks to the added weight of the spike.

PORTABLE POWER CAN BE PRICEY, BUT IT CAN ALSO BE WORTH THE EXPENSE!

Not everyone wants or needs power when camping, but for some it's nearly a necessity, like for powering medical devices.

GRID-DOWN PREPS

Keep your devices going during blackouts

BY JIM COBB

GENERATORS ARE GREAT, BUT THEY HAVE DRAWBACKS. THEY'RE LOUD, THEY'RE BULKY AND THEY REQUIRE FUEL STORAGE. THESE FACTORS DON T MAKE THEM IDEAL FOR EVERYONE.

If you live in an apartment, a condo or something similar, you probably don't have space for a single gas can, let alone several. Even if you did, setting up a generator on your patio or deck will draw lots of attention due to the noise, with everyone in the building, as well as neighboring ones, wanting to charge their phones or other devices.

Fortunately, there's a better option. It's called the portable power station. In a general sense, a portable power station is just a giant rechargeable battery. Once charged, it stores power until you need it. Most models have multiple means of charging, such as wall outlets, solar panels or 12V vehicle outlets.

In the plus column, a portable power station is very quiet. They're easy to charge and store for future use, often retaining a full charge for months at a time. However, this convenience comes at a price. They are expensive, quickly hitting four digits as you go up in power levels. They're also pretty heavy for their size. Then again, gas-powered generators aren't exactly lightweights, so it might be an even trade in that regard.

Bluetti makes one of the best portable power stations on the market today. Meet the Elite 200 V2.

ELITE 200 V2 SPECS

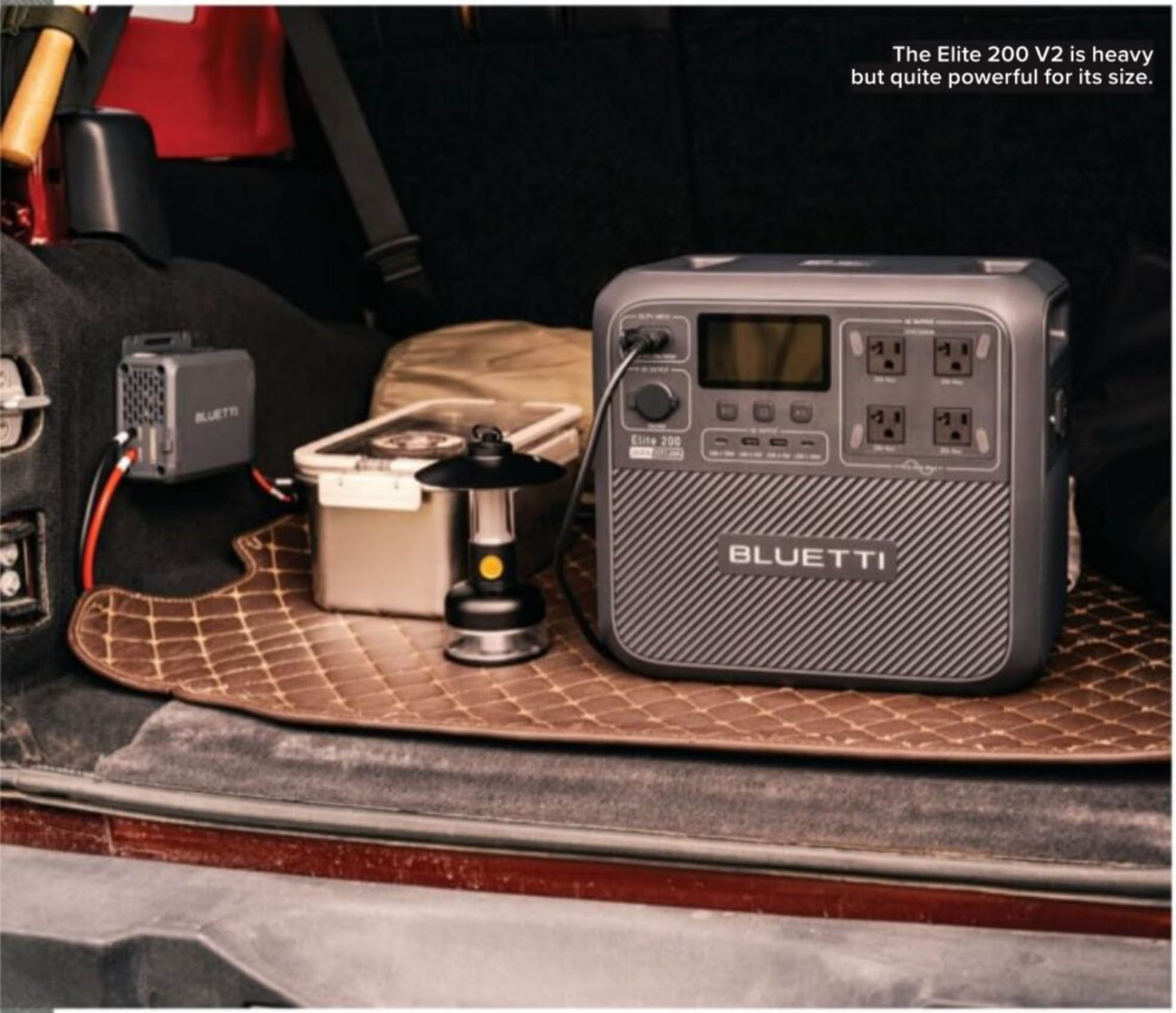
The unit is 13.8 inches by 9.8 inches by 12.7 inches. It has two carry handles at the top to help you manage the 53.4 pounds the Elite 200 V2 weighs. This is definitely not something you'll take backpacking, though it's perfectly suited for car camping.

It has a capacity of 2073.6Wh. The output measures 2600W, with a surge capacity of 3900W. It has a feature called TurboBoost that allows you to charge the battery to about 80% capacity in just one hour. This is great for situations where you need to top off the battery fast.

The Elite 200 V2 uses automotive-grade lithium iron phosphate cells. These will retain at least 80% of their capacity through several thousand charging cycles. This is truly a unit that's made to last, rather than so many products that are designed for planned obsolescence in a short period of time.

All told, there are nine outputs on this unit. It has four 120V AC outlets, two USB-A, two USB-C and one 12V. This gives you plenty of options for powering or charging just about any device or appliance you own. That said, it's important to understand that this isn't any sort of whole house generator. It has a lot of power capacity, don't get me wrong. But this isn't something that's going to power everything you own at once.

One thing that's really nice about the Elite 200 V2 is that virtually everything is on the front panel. All of the outlets and controls are there. The AC input for charging the unit from a wall outlet is on the right side of the case as you're facing the front. If you're dealing with a limited space environment,


The Elite 200 V2 is heavy but quite powerful for its size.

Elite 200
BLUETTI

This unit will power just about any type of common plug in the United States.

such as an RV, having everything right up front makes life so much easier. You don't need to juggle it around to reach everything.

The Elite 200 V2 has an LCD display that's bright, clear and easy to read. You can also use an app to control many of the functions via a Bluetooth or Wi-Fi connection.

In the box, you'll find an AC charging cable, a solar charging cable and a grounding screw. That screw is only used for grounding certain equipment, such as charging the unit using a two-pin cable. Everything was well organized in the box, which is a nice bonus.

PERFORMANCE

We've had the Elite 200 V2 for a few months. The first real use we had was when we were building a small greenhouse for my wife. We used the portable power station to power tools like a compound miter saw for a full day without any trouble at all.

I've also used it to power our refrigerator overnight, just to see how it would do. No problems whatsoever. We've taken it camping and used it to power air mattress inflators and such and it did great.

For grid-down scenarios, you'll be able to use this unit to power appliances like fans, hot plates and coffee makers quite easily. Again, this isn't going to power an entire house, but it'll provide you with plenty of conveniences to make life bearable until utilities are restored.

The Elite 200 V2 is pretty intuitive to use. The controls are easy to read and understand. I say this as a guy who isn't an electrician by any stretch. With gear like this, I much prefer the plug-and-play approach, and this unit provides that perfectly.

With 2600W available, this will provide plenty of power during grid-down emergencies, as well as when you're car camping or otherwise engaging in outdoor pursuits.

DOWNSIDES

These aren't complaints, not really, but they are definitely factors you should be aware of as you consider this portable power station. At nearly 54 pounds, it may not be quite as portable as some might prefer. This isn't something you'll want to lug up and down the basement steps on a regular basis. Instead, choose a main level location for it.

We also need to discuss the price tag. The Bluetti Elite 200 V2 has an MSRP of $1,699. That's quite an investment for most people, and not one to be taken lightly. And this doesn't take into account the cost of a few solar panels, should you wish to add them as an extra level of preparedness. The good news is that the unit routinely goes on sale for less than $1,000. You just need to watch the company's website at bluettipower.com.

All in all, the Elite 200 V2 is a great offering from Bluetti, a trusted name in portable power solutions.

STARTING WATTS VS. RUNNING WATTS

Any time you're looking at providing emergency power, you need to consider starting watts and running watts. Often, the starting watts, sometimes called the surge power, isn't taken into account. Running watts is the number of watts the appliance uses while in use. The starting or surge watts is what's required to actually start the appliance. This isn't something that applies to all appliances, but it's something you should look for when determining how much power your generator or portable power station needs to provide.

As an example, your refrigerator may only use 700 running watts, but it may also need over 2000 watts to start up. If the starting watts rating is higher than your power solution provides, you'll be out of luck.

The starting and running watts can typically be found on a sticker on the appliance, often on the back or bottom.

Backwoods Survival Guide

PRACTICAL ADVICE FOR THE SIMPLE LIFE

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